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-SELF SUFFICIENCY AND PLANET CARE-

EARTH GARDEN

—FOR BUSH OR CITY ALTERNATIVES—

•Owner-building octagons •Small business ideas •Growing mushrooms •Alternative pasture •Sailing to the far north, living from the sea •Remote area power systems •Bush tucker •"Stop the train!" — VFT in East Gippsland •Towards food self-sufficiency •A 'revolutionary' low-speed generator •Season by Season •Growing rosemary •Perce the fighting cock •Earth People Write •LAND LINES •EG Unclassifieds and much more . . .

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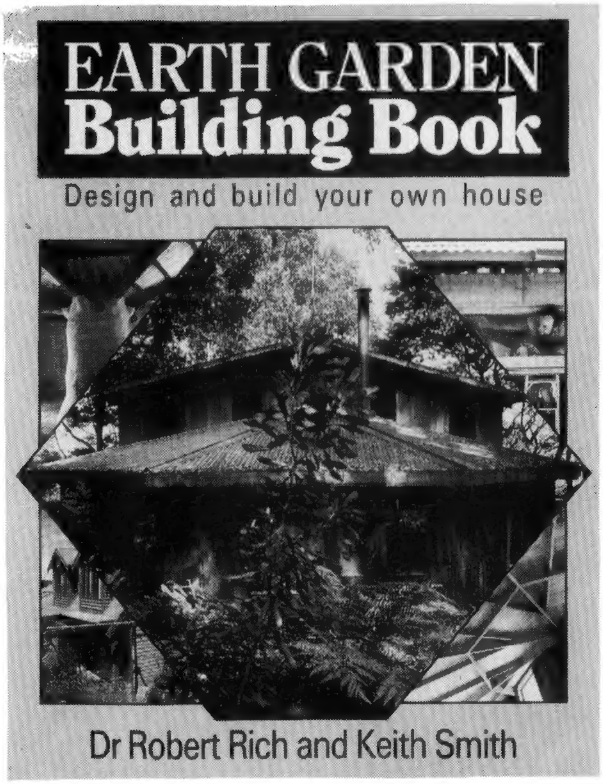

EARTH GARDEN
Building Book
Design and build your own house
Dr Robert Rich and Keith Smith

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Dr Robert Rich and Keith Smith
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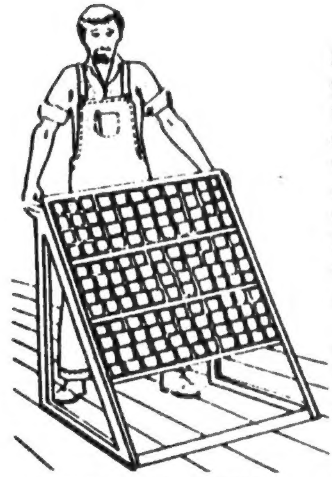

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-SELF SUFFICIENCY AND PLANET CARE-
EARTH GARDEN
—FOR BUSH OR CITY ALTERNATIVES—

Number 60 — April/May 1988

Cover photo: G E Schmida/ANT Photo Library.

•This issue's tree tax will be donated to the Australian Trust for Conservation Volunteers (PO Box 423 Ballarat, 3350), who in '86-'87 planted 226,741 trees.

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Founded by Keith & Irene Smith, 1972.

EARTH GARDEN is Australia's original journal of self-sufficiency and alternatives. It is intended as a forum of practical ideas, shared knowledge, sources and to point towards alternatives to unfulfilling consumerist lifestyles.

It's about putting a roof over your head, growing your own food, using alternative energy systems, and surviving — and thriving in the city or the bush, with the inner changes which follow when you're in tune with Nature.

Published and edited by Camille and Alan Thomas.

Book Review Editor: Sophie Masson.

Illustrations by Bronwyn Halls.

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Contributions to EARTH GARDEN are welcome — sharing information and experiences with other readers strengthens the network of Earth Gardeners.

Photos, illustrations and diagrams are important when sending us contributions.

Subscribers are sustainers — for subscription details see page 56.

We welcome advertisements appropriate to the aims and ideals of EARTH GARDEN, but reserve the right to refuse ads at our discretion. Write to us for display rates.

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Dear readers,

Welcome to the April issue of Earth Garden. In most parts of Australia cooler weather is setting in as a lead up to winter '88. Autumn is a lovely time of year — in the southern part of the country we can start pulling cuddly jumpers out of wardrobes. There's something special about the end of the day when the air gets that cold nip and you know that home will be warm. There's also something comforting about the sight of smoke floating up from a chimney or flue as you approach a house.

Not a bad time to start thinking about firewood for the winter, installing a slow combustion heater, or giving the chimney a sweep.

Many mudbrick owner-builders will have finished making their bricks and will be hoping to have them laid before the worst winter weather sets in. Owner builders who have chosen post and beam construction, and have their roofing up, will be pleased for the protection the drying bricks have.

The Earth Garden Building Book has nearly sold out its first print run and is set to be reprinted by the middle of the year. We have plenty of stocks of the book to tide us over until it reappears, so there's no chance of readers missing out on buying this successful book.

Late last month Australia Post released a new five cent stamp which was drawn by Earth Garden's illustrator, Bronwyn Halls. So next time you need another five cents' postage on a letter, you'll probably see Bronwyn's work.

The pot's been well stirred for this issue so we hope you enjoy the mixture of all sorts of stories. We often reread articles for the last time before publication while pasting up the final artwork on our homemade drafting table (usually while there's a good dose of midnight oil being burnt). This month I caught a glimpse of Jackie French's entertaining story, *The Passing of Perce*, and I found myself reading it out aloud — try it! We read it to our three year old, Tane, and he loved it as much as we enjoyed narrating it.

We have been pleasantly surprised to find that not only have readers accepted Earth Garden's new banner, but we seem to be attracting some new readers who previously would have passed over EG on the newsagents' shelves. It looks as though the February issue will sell very well, and if it does it may make it easier for us to absorb increases in production and postage costs.

During 1988 we will probably have to increase the cost of Earth Garden — there hasn't been a rise in the cover price since November 1984 but there have been plenty of rises in production costs since then. We will try to keep any rise to a minimum and hope that Earth Garden will remain good value for money — we think it is!

The new banner refers to "self-sufficiency and planet care" — two notions that most Earth Gardeners associate with each other. We have always felt that there is a deeper value in less consuming, self-sufficient lifestyles than solely the personal enrichment and satisfaction they return to people. There is also the fact that striving for such lifestyles reduces the strain on our planet to provide the resources to support us all. For instance, recycling our newspaper and cardboard reduces the need (and desire) to cut down huge tracts of forest for further consumption. Mulching the garden with waste paper, for people who live in parts of Australia with no recycling facilities (such as Tasmania!), is another effective way of helping the earth. We have a pie-in-the-sky dream of one day seeing small-scale community paper recycling plants in every town throughout the country.

Most of us feel disappointed at the huge waste of resources in every local tip — compost from vegetable scraps is valuable for any garden, whether you grow fruit and vegetables or not.

There are many ways that Earth Garden lifestyles reduce the strain on our small planet's resources. Apart from the degree of self-reliance that alternative energy systems bring, in many parts of the country it means that users aren't contributing to the tonnes of sulphur dioxide smoke pumped from huge coal-fired generators each day to produce our mains electricity. Even for those of us connected to the grid, being energy conservative in our homes still helps, apart from reducing our power bills.

Seven or eight years ago a British book appeared called *The Politics of Self-Sufficiency* which highlighted the fragile future for industrialised, high-tech societies. Western economies, based on the notion of open-ended economic and industrial growth must consume natural resources at an increasing rate (that is, exponentially) if they are to continue such growth patterns.

Earth Garden lifestyles tend towards a renewable (arithmetic) rate of use of resources, so that the foundations of industrialised societies must become further and further eroded while energy-conservative, renewable lifestyles do not.

Happy reading,

Camille & Alan

Earth People Write

Letters to Earth Garden are always very welcome.

Compost toilet training

Hi,

If you're over the age of consent and have a compost toilet, I need your help! I am trying to design a twin chamber aerobic composting toilet and have it passed (does anyone have a natural laxative?) by the Queensland Department of Health.

The toilet, when built, will reside in a beautiful triangular room with a vaulted ceiling in an octagonal, two storey, also vaulted and split-level with mezzanine, house which I have designed for a friend: to be built on the eastern slope of Mount Mellum in the Landsborough Shire of Queensland.

I inquired to the Shire Council Building Inspector (or the LSCBI) with regards to approval of a composting toilet system. The local Shire doesn't, it seems, go to the toilet without approval from the State Health Department.

I personally delivered a letter with the design and some supporting material (photocopies of chapters from two books about composting toilets) to the Health Department, waited and then phoned them two weeks later.

"Did you receive my letter? Have you seen the design? Have you read the supporting material?" I asked.

"Ah, yes we did but . . . " he didn't know what direction he should go in with this one, "I mean if I approve this design it means anyone could build and have one!"

God (who art a beaurocrat) forbid.

Of course Government departments must be cautious. So now to the very root of how some of you Earth Gardeners may be able to help. The Health Department would like information about similarly designed compost toilets (two holers) which are in use in Australia today. Preferably those that have been approved by other Health Departments, councils and/or any other officious government body.

Also information regarding the date the design was approved and by who and where. And any details about any tests carried out to determine whether composting was successful in terminating pathogens and parasites, and who made the tests etc *ad nauseum.*

Good-bye to the Flush Toilet and *Sanitation without Water* (the author's and publisher's names have escaped me) are two books (two of many) which are helpful, and available in most libraries, to anyone interested. I will be very grateful to anyone who can forward any relevent information.

"In formation?" I asked.

"Yes indeed!" replied Biggles gratefully. "Thankyou!" I replied.

Johnathan Berry, 28 Douglas St, Sherwood 4075.

EG's fault

Dear Earth Garden,

At last I have my little piece of heaven. 50 acres in Kangaroo Valley with rainforest and it's all your fault.

B Brownjohn, Berry, NSW.

Pest problems

Dear Earth Garden,

Our mudbrick house provides great insulation and protects us from the elements. It also does the same for other creatures of this planet and we write seeking suggestions from other mudbrick dwellers of the human species as to control for the non-human.

First there is the *Amegilla sp,* a native bee which drills our northern wall full of holes for egg laying. The young always return to their birthplace so year after year the holes increase in numbers and the mud blocks diminish. Scientific paper *Aust J Zool* 1968 16 gives all the life story and habits of these creatures but no real solutions.

So we have packed up hessian across all the house walls along the north side to attempt to break the bees' life cycle.

The other problems are ants of several different species which have made homes in cracks, behind tiles and other nooks and crannies. Borax, sugar and cocoa mixes are ignored — much better food elsewhere. Ordinary chalk powder slows up some species but doesn't improve the flavour of the bread when bread-making takes place.

The bench tops can't be isolated in cans of water topped with kerosene. Perhaps soem Earth Garden people elsewhere have other possible solutions.

Incidentally, many of the articles on gardening emphasise the use of mulch to stop weeds. One day we'll tell you about this part of the world where "farmers' friends", kikuyu, Sida, and Cobbler's pegs grow up through thick mulch. Other methods such as weeding are the only solution.

James L Tedder, Pavans Road, Grassy Head, via Stuarts Point, 2441.

Grain-growing

Dear Earth Gardeners,

Really enjoying the articles by Arthur Brotheridge (particularly keen to hear what he has to say re growing grain). Sophie Masson (any more ideas/ recipes for the elder tree — I never get any berries!) and Jackie French I shall really try to grow leeks again!

Has anyone any hints/clues re growing grain for home consumption and or lucerne etc, for animal fodder and mulch on a small scale (1/4 acre or less).

Also has anyone any experience in keeping fish in holding tanks/ kiddies pool (or yabbies) for home consumption?

We enjoy the magazine greatly Camille and Alan, thank you.

Mrs S Gall, RMB 629, Tindalls Lane, Berry 2535.

In this issue Arthur has the first of two articles on small scale grain-growing, and EG 52 had articles on backyard marron growing.

—Alan.

Lifestyle opportunity

Dear Friends,

I am in my seventies. In June last year I lost my wife after fifty years together. I have seven lovely acres, unspoiled, bordering Karingah Chase National Park. There is a waterfall and rock pools, rocks, trees and many birds, possums and wallabies etc. I have a garden, overgrown at present. Also on the land is a studio, another building and a caravan with an aluminium annexe. EL, gas, hot water, shower and toilet. I would be willing to let a person (female) live in it rent free in exchange for help with shopping and the cooking of a couple of meals a day.

I do *not* want religious people, Zen people however would be excepted. I am an artist, have paintings in the Art Gallery of NSW, and Museum of Art in Grenoble, France. Also in the Power Gallery etc. I have travelled all over Australia and lived with Aborigines in the Northern Territory and Queensland. Jumped the rattlers in the Depression, prospected for gold and tin.

If there is anyone willing to share this lifestyle would they contact me at the below address or phone (02) 450 2514. French and Celtic people would be most welcome. Yours sincerely

John Dultrud-Moore, 167 Wirreanda Rd, Tumbledown Dick via Narrabeen, NSW 2101.

Magic fridges

Dear Earth Gardeners,

What we all need (those of us not having 240 volt mains power) is not solar electric fridges, about which so much has been said in recent issues, nor gas fridges, but *real* solar fridges. Where are they?

Way back in the mid 70s, I photocopied a short news item in *Mechanix Illustrated* about a zeolite fridge. It was about to go onto the market back then. It could make 15 pounds of ice per day! Sitting out in the sun, with no moving mechanical parts. It worked by using zeolite, which releases water vapour when heated by the sun, in a panel.

The vapour is condensed and runs to an evaporator where it picks up heat, causing ice to form in the storage container. The evaporated water is then picked up again by the zeolites in the solar panel, completing the cycle.

It sounds like the answer to the bush dweller's dream. Even if there were problems in implementing the idea (and the article didn't mention any), the principle is so simple and enticing that I'm surprised we're not all using them now.

Does anybody know more about these fridges? If the idea works, how about any enterpreneurial types out there getting these on the market for us. We *need* them. Kind regards,

Kris Jacques, South Grafton, NSW.

We would be very keen to hear from anyone who knows anything about such a fridge.

—Camille & Alan.

Subscribers are sustainers

Dear Camille and Alan,

We have been reading Earth Garden since No 1 and thought it time to subscribe. We're finding that if we don't get in to buy a copy when they arrive these days we miss out! Our kindest regards,

Wayne, Kate and kids.

Sorry to hear that you have trouble getting Earth Garden before your newsagent sells out, but we're glad you're subscribing—that way we don't have to give away half the cover price in distribution costs!

—Camille & Alan.

How many are celebrating?

Dear Camille and Alan,

I thought your readers would appreciate an idea we have introduced for 1988. As you know many people are disturbed by the way the Bicentennial year is being celebrated, particularly in its insensitive attitudes to Aboriginal Australians. Many of us have decided to boycott the celebrations unless they take seriously the shame of white invasion and oppression of the original inhabitants.

As one way (there are many other ideas about which are also to be supported) we have introduced the 'Black Ribbon', the idea being that during 1988 we simply wear some kind of black ribbon, as a sign of our

1 mourning for the suffering of Black Australians over the last 200 years, the invasion of their land and the desecration of their culture.

2 thankfulness that despite all this, Australian Aborigines have survived.

3 hope that 1988 will be the beginning of a new period of justice for the Aboriginal people, including recognition of the unique sovereign rights in their land and of their special history and culture.

I'm sure your readers will find affiliation with the spirit of the Black Ribbon. For more details contact AWD,

124 Napier St, Fitzroy, phone 419 5588. Yours sincerely,
Stuart Reid, South Camberwell, Victoria.

Thank you for your thoughts Stuart. We both hope that many people will be able to see through the wasteful advertising hype surrounding the Bicentennial and consider the facts about the European invasion of Australia 200 years ago.

In fact, if I hear that stupid jingle 'Celebration of the Nation' one more time I think I'll go bananas. Just think what useful public housing projects could have been financed with the tens of thousands of dollars spent on that jingle.

—Alan.

Chemical residue test

Dear Camille & Alan,

Earth Garden readers who are contemplating buying land may be interested to know that the Australian Government Analytical Laboritory in Sydney will test your soil for pesticide and other organic residues for a cost of $35 per sample. It would be crazy to buy land for the purposes of self-sufficiency and growing organically only to find at some later time that your soil is contaminated with toxic pesticides, so if there is any cause for concern why not have your land checked out before you buy.

It is easy to obtain your samples. All you need to do is to draw a mental diagonal from one corner of each paddock to the opposite corner, and roughly space out six equidistant collection points along the diagonal. At each point dig down approximately 4-6 inches and extract a small handful of soil. Mix all six small handfulls together in a plastic bag. (This then constitutes an average sample or specimen.)

You will need to do the same thing for every fenced paddock. The lab's address is: AGAL, Dept of Science, PO Box 385, Pymble, NSW 2073, Telephone (02) 449 0111; contact person: Micheal Atkinson, Senior Chemist. Regards,
Gayle Russell, Oatley, NSW.

Dear Friends,

The changes in the magazine are interesting and positive. Change is the essence. The only constant *is* change, otherwise stagnation ensues. That's a natural law, and unhappiness is created when we endeavour to resist change, endeavour to keep things in the maintenance phase of the cyclic creation, maintenance — destruction.

May 1988 bring us, as a species, more enlightenment, more understanding. Sincerely,
Mary Trevena Rowe, West Kempsey, NSW.

Organically-grown barley

Dear Readers,

I am interested in buying barley organically grown. Do you know anyone who could sell me one bag or two bags of this?

Secondly: I brew my own beer from malt grain bought under difficulties — for instance you have to buy 10 bags at a time when you can get it.

Are there any readers out there who know how to malt barley? Barley is not only useful for beer but can be fed to chooks etc. I have complete instructions on how to malt barley from an American brewer which could be sent to any interested person. My problem is setting up the equipment to do this. Perhaps there is a handyperson out there interested. The basic problem seems to be to keep a kiln at a constant temperature of 120° F. My electrical knowledge doesn't extend as far as this.
John D O'Connor, 9 Brownes Crescent, Eltham, Victoria 3095.

Swiss readers

Dear Camille and Alan,

While land hunting in July this year we stumbled across the Earth Garden magazine. I am formerly from South Australia and haven't seen it there at all (maybe we weren't looking). Anyway we are now proud owners of 31 acres at Larnook near Lismore NSW and are keen to get hold of all the Earth Garden mags. By the way my wife (Jeannette) is Swiss and we're living here in Switzerland for three years before we go back to Australia.

I already have Keith's *Energy Works*, a fantastic book. I an also very interested in bioligical pest control for both plants and animals. If you know of any books on this subject I would very much like to know them too.
Craig & Jeannette Eckert, Zurich, Switzerland.

Chemical neighbours

Dear Earth Garden,

I have been extremely ill for a number of months now. At present I am at Flinders Medical Centre. Perhaps I will recover. Below is part of a copy of a letter to the South Australian Minister for Agriculture, Mr Kym Mayes.

Dear Mr Mayes,

I am writing to you about chemical spray drift in the mid-north of South Australia. While your intentions of holding an enquiry into the problem were pleasing, I am not pleased at all after experiencing that enquiry.

If an enquiry is to be a success it must be done according to scientific practices. It is not good enough to take a little sample of milk and keep it for a length of time refrigerated so that any chemicals would have broken down into various substances. While the same applies to water samples, I further note that there was no interest in the whole matter when my donkey herd showed some of the most severe symptoms so far.

The matters I brought to your attention do not only concern me and the acres I live on. They concern the whole population in this State. The health of everybody is at stake, and if left to the chemical farmer these matters will prove to be very expensive for the future, both with grave illnesses, and death.

What is still further causing concern is the destruction of wildlife by chemical drift and direct over-spraying. The area around Undalya used to be teeming with wildlife, particularly birds and aquatic life. After last year's great bird kill some courageous sparrows, starlings, and honeyeaters migrated to this district. However, of the 14 sparrows we have had there are only two or three pairs remaining. This is simply not adequate for a sustainable human future, nor does it improve the chances of survival of any animals.

I would also like to highlight the recent Plague Locust and Grasshopper eradication campaign. I suffered the most devastating period I ever had to suffer — for two months I was mostly in bed with constant colic, breathing difficulties, ear troubles, and abdominal and chest pains, and finally a very severe anaemia. Chemical use that encompasses any human suffering must be discontinued. The use of chemicals which causes human or animal suffering should be a criminal offence.

May I describe a typical chemical farmer when confronted with the fact that his chemical spray is drifting onto other people and their properties. I rang him about it but he allowed the spraying to continue. I also rang the District Council who stated that their Health Inspector could not stop the spraying. Finally I contacted your office only to be told that nothing could be done either and, perhaps, the Health Commission could do something.

For your information, the spraying continued, and I am still trying to recover. A number of my donkeys also showed symptoms of 24D poisoning. The symptoms in humans are a hayfever-like affliction coupled with colic and diarrhoea.

This situation has to change! I cannot go and ask for compensation because five or ten of my donkeys had sore noses and diarrhoea, nor can I ask to be compensated for my personal suffering. The citizens of this State need the assistance of the government.

You are the Minister administering our laws on cruelty to animals. Cruelty inflicted by the use of chemicals in agriculture is as cruel as any other cruelty. For an animal to die of chemical contamination there is an enormous suffering before death. The pain I have to endure is also what they feel and as it kills them so often it must be worse. So much for our society and its humane disposition.

I implore you to take urgent action in these matters. Lip service is only wasting valuable resources and time.

Armin Ptak, Roaring Lion Donkey Stud, South Australia.

Dear Camille and Alan,

Thankyou for publishing my request re EG 13. We have had a good responce, a copy has been sent to us, and others have made offers. We are very grateful and now we would like to tell readers to stop sending any more copies to us. Yours faithfully,

Bruce Fisher, Watsonia, Victoria.

Spinning get together

Dear Camille and Alan,

I have been a keen Earth Garden reader since no 32 but up until now have just been collected my copy from the local newsagent. I would like to become a subscriber now.

We are retired, building a mudbrick house, finding it hard work but slowly getting there. I belong to a group in Grafton who are hoping to have 200 spinning wheels going together. We are a happy bunch of poeple, all women except one, all ages and interests as well. We will hold *Bicentennial 200 Spinning Wheels 200 Years on* Saturday May 14th, 1988 at Market Square, Grafton, NSW from 10 am to 4 pm.

If you spin, you are invited to come along this day. You are welcome to bring your own finished work to display or sell. We need your involvement to achieve our aim of 200 spinners, spinning together. We anticipate a most exciting day of 'yarn' spinning amidst the harmony of whirring spinning wheels. It is an outdoor venue, situated in the main street of Grafton. For further information please contact:

The Grafton Fibre Craft Group, 16 Kemp St, Grafton 2460. Phone Linda (066) 425585 or Val (066) 47 3273.

Papier-maché Easter eggs

Dear Earth Garden,

I was hoping you could sometime show us how to make cardboard easter egg (paper mache). Ones bring in a good price, small-normal size is $7.50 ... saw one in the Sydney Town Hall last year, most other countries sell brightly coloured cardboard Easter eggs very cheap... (could use recycled cardboard-paper). . . from jewelery size to one capable of taking a small garment. Many people can't eat sweets & chocolates but they still like a pressie, whilst others gorge themselves on eggs & bunnies. Just a thought, I'm too close to the pearly gates to get started again on this project, but I'd love to see 'the greenies' make their fortune at it— recycling.

Pat Cunningham, Leura, NSW.

Dear Alan and Camille,

It has been some time since I've had resources and time to catch up with Earth Garden. I have always had a deep desire to live an Earth Gardener's lifestyle and some years ago I found myself in a position (financially that is) to achieve this. So I began searching for information to be able to make an intelligent choice when it came to buying land. In 1985-86 (it all begins to run together) I discovered your wonderful magazine. I think I ordered just about everything. Took quite a while to get through 14 odd years of information, adventures and advice.

Informed and enthused, I splurged on a decrebit 20 year old Landrover and departed to parts unknown on substantially less than a 'shoestring' budget. We were pressed for time as philosophically I do not agree with leaving money in banks, (to oil the corporate gears) and our funds were extremely limited. You can't work and look at land at the same time.

Two weeks away, two weeks working for 6 months, checking out every property for sale in the 100 km square of Australia we had narrowed our choices down to. New Year's Day '87 found us high in the Ranges of central

NSW in a wet windswept tent, huddled over our little pressure stove. While we waited for our first cuppa to boil, we bit the bullet and decided on one of the properties we had seen.

It was during this time my subscription to EG lapsed — right up to Settlement we didn't dare spend a cent. Finally after 8 months we had our Title, a most anti-climatic experience. So now we are land owners albeit extremely poor ones. Our land has no improvements such as a shed or fences, so we are still living in the city, trying to save money. The Hard Times Handbook has been used more often than just about anything else. This year we are going to TAFE for evening courses in Farm Technology, and Small Area Farming. We are both mad recycylers, my other half is a self-made engineer and part time tinkerer, hence a backyard full of various old motors he assures me will one day become pumps, windmills etc. Lately we have not turned away any offers of old furniture and the like. Our tiny rented house bulges at the seams.

Our lists of things to get or grow or do, grow shorter at a frustratingly slow pace, but now resubscribing to EG can be crossed off at last. Earth Garden has been incredibly useful, educational and encouraging and I have introduced many friends in town and country to it. It has been absolutely invaluable to us in choosing our block of land, and for giving us many hours of discussion and ideas that have refined much of our thinking and planning.

I would like to thank the editors, past and present for producing such an exceptional magazine.

Tegwen Edwards, Camperdown NSW.

Bad experiences

Dear readers,

I've been agonising over whether I should write or not, because I love the feeling of uplifting which I get from reading Earth Garden, but here goes. I guess it should be called a word of warning for those setting off on an alternative lifestyle. This is what happened to us: me, my partner and five children who set off in our bus, towing a car and all our possessions. We headed for the north coast of NSW looking for our little piece of paradise.

Our car had to be left in Lismore under orders from the law, and while left it went through the last Lismore flood, and a good many of our possessions were lost. We then took an offer to leave our car and almost all our possessions with a woman who lived on property just out of Nimbin, so that we could travel a little easier with our large family and three dogs.

We then found that the house we had on the market for sale had been squatted in by my partner's ex-wife, so the possibility of buying our own land wasn't possible at the present. So, we found somewhere else to live till we could get the legal hassles sorted out.

Having moved in, we decided to trek back to Nimbin to recover our possessions, only to find almost everything had been stolen, total cost of which was almost $15,000 not to mention the heartbreak to our kids whose bikes, Christmas presents and personal things like photos and school records and equipment were also gone.

So be careful all you beautiful people out there, some of the people in this world are not so nice, even in a beautiful area like Nimbin. Any comments, please write to:

Doris, 63 Bombala St, Delegate, NSW, 2633.

New WWOOF address

Dear Friends,

This is to inform (or remind) you that we have now moved to our new address. People can obtain our worklist (and save time) by simple sending $10. Yours sincerely,

Lionel Pollard, WWOOF (Willing Workers On Organic Farms), Mt Murrindal Reserve, W Tree via Buchan, Victoria 3885.

Dear Camille and Alan,

After 10 or 11 years of hard work, financial and personal hardship, and all the other things that are part and parcel of leaving the city and getting your act together in the bush, we finally settled down on our own little piece of Australia. We designed and built our ideal, passive solar, alternative-powered country homestead, on a beautiful community-owned property, just north of Nimbin.

Just two years ago we moved into our house, situated on a beautiful, grassy flat surrounded by tall elegant eucalypts, with emergent rainforest species gradually taking over what was their original domain.

We awake to the call of whip birds, and go to sleep serenaded by frogs and the soft shushing of the creek which is spawned by the rainforest of the Border Ranges National Park just 600 feet above us, on the top of Blue Knob.

When I drive home from town and see the 'Knob', stark against the sky, sometimes with a lone cloud gently draped over its dark green rainforest canopy, it always affects me the same way; this is home, the home of our three children and friends, and the wisdom of the forest, its awesome beauty, complexity and harmony, seeps deep into your soul.

Over the years, when we were lacking motivation or knowledge, Earth Garden provided the necessary information and inspiration to keep 'doing' and 'dreaming'. Please accept my heartfelt thanks for the great work that everybody connected with EG has done over the years, all the way back to EG 1.

Time has a way of altering your priorities, and now we find we can best fulfil our planetary commitments by taking up opportunities that have come our way from Canberra. So we're moving and our house has unfortunately, to be put on the market. I could think of no better way for the work on our little patch of Australia we call home to continue, than for another Earth Gardener to take over where we left off, and experience growing in the bush.* Go well in peace and love,

Trevor Ellis and family, 1 Darwinia Terrace, Rivett, ACT 2611.

**See LAND LINES in this issue.*

Living from the sea, sailing to the far north

Last year Don and Jose set off on their home-built 38 foot steel cutter-rigged yacht on a sea journey of 3000 nautical miles. This took them from their home island near Gladstone, up the Queensland coastline inside the Great Barrier Reef, past the tip of Cape York Peninsular to Thursday Island. They returned by much the same route to their home again, inside seven months.

by Jose Robinson

Wild Cattle Island, Queensland.

THERE is a romantic sailor in most of us. Some prefer to do their sailing, dreaming from their safe comfortable arm-chair at home, while others like to go out and do it.

Along the Queensland coastline, there is a myriad of tiny islands, reefs and coral cays, plus stretches of deserted mainland. Here, you can live like Robinson Crusoe in the wilds, or on your own self-contained suitably equipped sailing boat . . . moving on as the inclination takes you, and living mostly from the sea.

Providing the weather is fair, you can go where you choose and become a temporary ruler of a tiny coral cay, or a tropical Barrier Reef Island, with *you* as sole human occupant.

The further north you sail, the more likely you are to have an island or anchorage to yourself. Once you leave Lizard Island which is 50 nautical miles north east of Cooktown, you are in tiger country (or should I say crocodile country). Dangerous reefs await the unwary, as well as isolated pinnacles of coral which thrust up from many fathoms, like enormous dragon's teeth. A constant vigil of the charts is necessary.

Miles and miles of glistening sand, whispering palms and the siren call of fair winds and wide open waters — these are the softer lures of northern horizons. Step aboard our 38 footer *Reef Knot* and sail with us!

Our trip begins

It was winter and mid June when we stepped out our front door onto our yacht and 'turned left', for our escapade north. We allowed ourselves about seven months for this adventure of sailing to the northernmost tip of Australia and a little beyond, plus the return trip home. Our time was flexible, so we made no definite promise to ourselves, family or friends, about when we'd be back.

Since launching our boat four years earlier, we'd made several shorter trips part way up the coast, and these had prepared us somewhat for this more extensive trip.

Self sufficiency

Once we set sail, our boat was our total life support system. We gave a lot of forethought about provisions, charts, spare parts, hobbies, survival kit, fresh vegetable gardening, water supply, and many other things. We'd done lots of homework.

We stowed aboard extensive stores of home-dried foods, stocks of home made wines and a beer fermenter for home brew, and a good stock of canned foods (unfortunately you can't get away from that).

Fresh fruits, vegetables, home-prepared frozen dinners as much as our refrigeration could carry, were also suitably stored. We juiced dozens of home grown citrus and passionfruit and packaged it in individual frozen zip-topped plastic bags. The latter took up very little space, because they could be stacked reasonably flat, when frozen at home beforehand. There were many other creature comforts that we managed to pack in. It never ceased to amaze us, that after stowing all this gear, the yacht still managed to float.

Pecking order

Himself had only one title, and that was of course Skipper. Yours truly went under many names including First Mate, Galley Slave, Dogsbody, and general lowly Rouse-about. However it was all fun.

New friends

As we cruised up the central Queensland coast towards the popular Whitsunday group of islands, we met many yachtees from southern States all heading in the same direction. All moving away from that bitter cold winter weather further south. We made many new friends as we shared anchorages each night with different boats. Most were only going a short way up the coast, because their time was limited, and they had to allow for the return journey.

The lure of paradise

Just as the South Seas Islands of the Pacific once lured Somerset Maugham from England and Gaugain from France, the delightful Whitsunday Islands continue to lure people from all over the world to come back again and again. The fascinating tranquility of the palm-fringed paradise is at its ultimate in this area.

History

It was exactly 217 years ago that Captain James Cook 'discovered' the Whitsunday Island passage. It was to be another 100 years before Europeans eventually settled on some of these islands, initially taking up grazing leases. Later the difficulty of access, and the long trek to southern markets made such activities uneconomical.

'Reef Knot' at anchor at Keswick Island.

Some years later the abundant, magnificent giant Hoop Pine trees on most of these islands were cut down at random for the timber industry — mute testimony to our short-sighted less conservation-minded forebears. Today there are relatively few stands of these noble giants left.

National parks

Many of the islands off the coast are now national parks. These national parks laws permit maximum public access and enjoyment, but with constraints for protecting the islands, reefs and marine life.

Island resorts

For those who seek the packaged entertainment and nightlife of resorts, there are many islands and coastal areas which provide ample attractions of this nature. We preferred to explore the unspoiled uninhabited islands and coral cays which abound all along the 1200 nautical miles of Barrier Reef.

Whales

Many times we sighted whales near our boat. It was a delightful experience to see a mother and calf frolicking together and executing their spectacular tail walks.

Goat hunting

By the time we'd completed the first four weeks of our trip, our initial stock of frozen meals was finished. We'd been catching plenty of fresh fish, but the Skipper began to think in terms of getting some fresh meat.

It so happened that a couple of our friends caretake a privately leased island, and they invited us to come with them on a wild goat hunt.

Introduced animals such as goats and pigs are unfortunately rife on some of the islands, and do a great deal of damage to the native fauna and flora. While any hunting is banned in the national park islands, there are plenty of other islands where the casual hunter may find a good meal on the hoof. While at the same time, he is doing a small favour for the immensely overstocked inbred herds.

Neither the Skipper nor I had any previous experience in killing for food, other than poultry or fish, and we didn't particularly relish the idea. However our friends assured us it would be done in a very humane manner, and that wild goat meat marinated and carefully cooked, was delicious. So we went along with the idea. It turned out our friend did all the hard work of stalking and bagging, while the Skipper, myself and our friend's wife stayed with the dinghy and endeavoured to keep the small craft from bashing onto the reef. About half an hour later, down the hill came our hunter, struggling to carry two slain prime goats.

Our freezer on the yacht was filled with fresh meat sufficient to last us many weeks. We had cause to be very grateful to our friends' generosity some weeks later, as bad weather kept us stranded on a tiny island for weeks, where strangely enough, the fishing wasn't good.

Fresh water tanks

Our two water tanks on the yacht hold 500 litres. Also we usually carry a couple of 20 litre plastic drums full for emergencies. Fresh water is always at a premium on any sort of boat. It behoves the crew to use it very sparingly at all times. In order of priorities fresh water is for drinking and making coffee. After that comes washing dishes, clothes, shampoos and bodies in that order. Salt water can be used partially in cooking at a ratio of one salt water to three of fresh. Dishes can be washed in salt water, but the tea towels become stiff and don't dry well. Whenever possible, we bathed in the sea, using the special coconut oil salt water soap. Once we reached the far north, it wasn't safe to swim because of crocodiles, so we had to resort to a bucket-shower on the back deck.

We had an awning on the back deck, so we could catch fresh water by channelling it via a hose straight into our tanks. We do have a fresh water shower, but that was only for special occasions.

Ship's log

Each day Don entered into the ship's log, the important information relevant to running the boat. I had my own log, which was more like a diary. Into this I entered our

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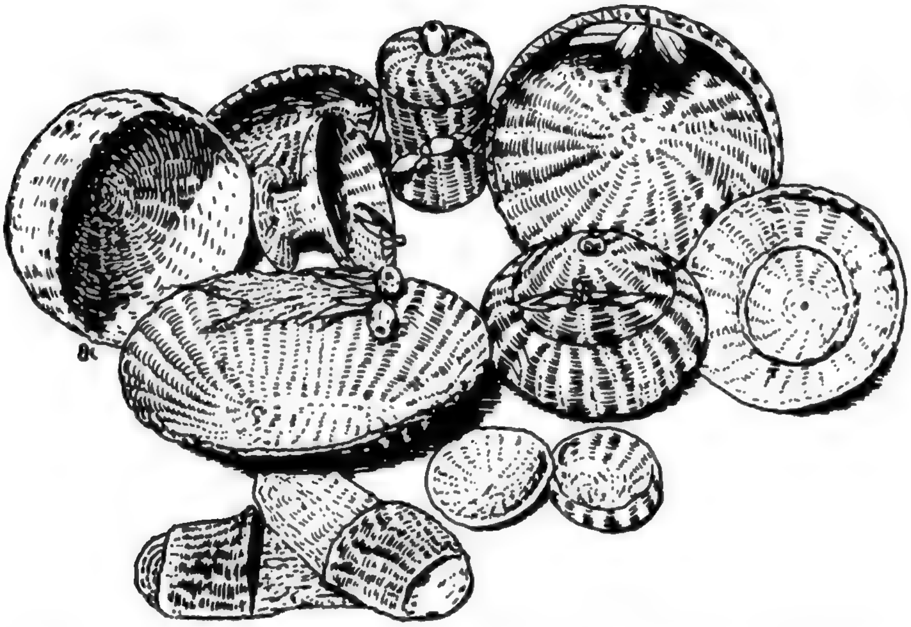

Some of the grass weaving that Jose completed on her journey to the far north.

day to day happenings of interest, like who caught the bigger fish. I wrote about the beautiful flocks of nutmeg pigeons, the pelicans and the sun birds. And the crocodiles!

One of my notations included the incident of a visiting yachtee falling overboard in the dark, while having a pee on deck. He had been imbibing a little of Don's home brew. Fortunately it wasn't in a crocodile infested area.

Cape York Peninsula

Leaving Lizard Island, we headed up Cape York Peninsula towards the Coral Sea. This is one of the most fascinating sea laneways in the world. We sailed north with the coastline ever to port on our westward side. Eastward to starboard, the Great Barrier Reef guarded us from the open Pacific.

Rounding the top tip of Australia at Cape York was one of the highlights of our whole trip. Here at last, Australia lay to the south of us. This was a momentous occasion, and we drank a toast on the foredeck of *Reef Knot*.

Thursday Island

By the end of the first week in October, we had reached Thursday Island. We'd been sailing the high seas for three and a half months. September/October is usually a time of change in the far north. The south east trade winds begin to give way to the north easterlies. Frequently the breezes become light and variable at this time. However this year it seemed everything was late. Just our luck! The locals told us, this September was one of the windiest on record.

Torres Strait

Once in the Torres Strait, tides can be a problem. This area is one of the most complex in the world for tidal predictions. To the east is the Coral Sea and the the west is the Arafura Sea. One sea experiences tides of a lesser height than the other, so this means that on occasions the water actually runs downhill. Sometimes the tide runs at 7 knots which can be disastrous if you're trying to sail against it.

A few old pearling luggers were anchored in and around Thursday Island, giving it charm and atmosphere. The Torres Strait Islanders are a gentle people, and we found them friendly and happy. It is hard to imagine that their ancestors of only a couple of generations ago were fierce head hunters and cannibals. Unfortunately the making of artifacts is now almost lost as a significant art form in the Torres Strait. Their once great culture has almost disappeared.

Mangoes

We stocked up with fresh fruits and vegetables whenever and wherever we could. There were times when we were fresh out, and then we resorted to our solar dried produce. At Horn Island which is next to Thursday Island, there are numerous mango trees which at the time we were there, were loaded with green but fully formed fruit. The islander children picked dozens of them for us, so a couple of weeks later, we had more ripe fruit than we needed. We peeled and sliced them and solar dried some, and put some in the freezer. There would be no scurvy on this ship!

The second part of Jose's story will appear in the next issue of Earth Garden.

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The passing of Perce

by Jackie French

Braidwood, New South Wales.

HE WAS born to be a Perce. He was well travelled for a rooster, though it didn't add to his *savoir faire*. He'd started off in Sydney, a strapping young Chinese fighting cock, all strut and grey feathered feet. He'd had two other owners before he got to me. They'd also called him Perce, though I didn't know it when I named him. Perce was his destiny.

He looked like a Perce, a rather tattered Sydney bookie of a rooster. Even his feathers had the colours of a daggy sports coat.

My friend had heard that I was thinking of getting chooks. She was ecstatic.

"You must have Perce then! He'll protect them." I protested that the chook house was still in the drafting stages.

"Perce doesn't need a chook house," she said airily. "He looks after himself."

"What about foxes?" I asked. She shrugged that off. "Perce is more than a match for any fox," she assured me. "He slashed one across the face last week."

I racked my brains. "He'll get lonely." I suggested.

She shook her head. "Not Perce. He'll probably get very attached to you. He'll be company for you," she insisted.

There's not much you can do when a friend insists on giving you her rooster. He arrived, boxed, in her boot next day. She paused before she opened it. "You haven't got a milking bucket have you?" she asked cautiously.

"No," I answered.

"That's all right then," she said, relieved. She opened the boot and the box. A small tatty head peered out, gave a cluck, and jumped. Perce had arrived.

He didn't look like a fox basher. He looked more like a feathered mouse. An elderly one. Except for his feet. They were dramatic, fringed and feathered with *very* long spurs.

Perce strutted twice around the car, once around the flat by the creek then marched up to the house. He blinked at it, approved, then leapt for my bedroom window sill. He shut his eyes.

"He sleeps a lot," explained my friend. We went in and I put the kettle on. Now Perce was safely ensconced she opened up a bit about him.

"It was the milking bucket," she explained. "He really had to go."

Whhat milking bucket?" I enquired. It turned out that every morning when she went to milk the cow she carried a fine shiny stainless steel bucket. Perce would inspect the bucket, assume his reflection was another rooster, and pounce. It was distracting, and a ferocious elderly rooster charging under her feet upset the cow. Her small daughter wanted to help, too, but was put off by Perce.

"Does he ever attack people?" I asked, alarmed.

"Only men," assured my friend. "That won't matter. You haven't got any down here."

I pointed out that actually a male was in residence most weekends — my husband of the time — and that other friends did call occasionally, some of whom were male. My friend refused to think this could be a problem.

"They'll learn to keep clear of him," she assured me, gathering up her belongings.

I rather hoped by now that Perce would suddenly wake and fling himself upon her, begging her to keep him and return him to his friendly foe the milking bucket. But he didn't blink as the car swept off, just slept there peacefully on the window sill.

He woke about four o'clock, grunted, and shuffled down. I was weeding the garden. He inspected me, gave a gargled crow of recognition, then pecked companionably under the fruit trees for a while.

He really did look decorative in a geriatric sort of way. Maybe my friend was right. He was company. At four thirty he retired to the window sill again. Perce kept early hours. I went to bed later. I'd been in bed half an hour when I realised.

Perce snored. It was a loud snore. It was an uneven snore, a sort of snort and then a gurgle and a massive hooting noise. I went outside and picked him up firmly. Perce gave a startled shriek, leapt from my hands and reached the ground, spurs ready. I looked at him cautiously. He looked

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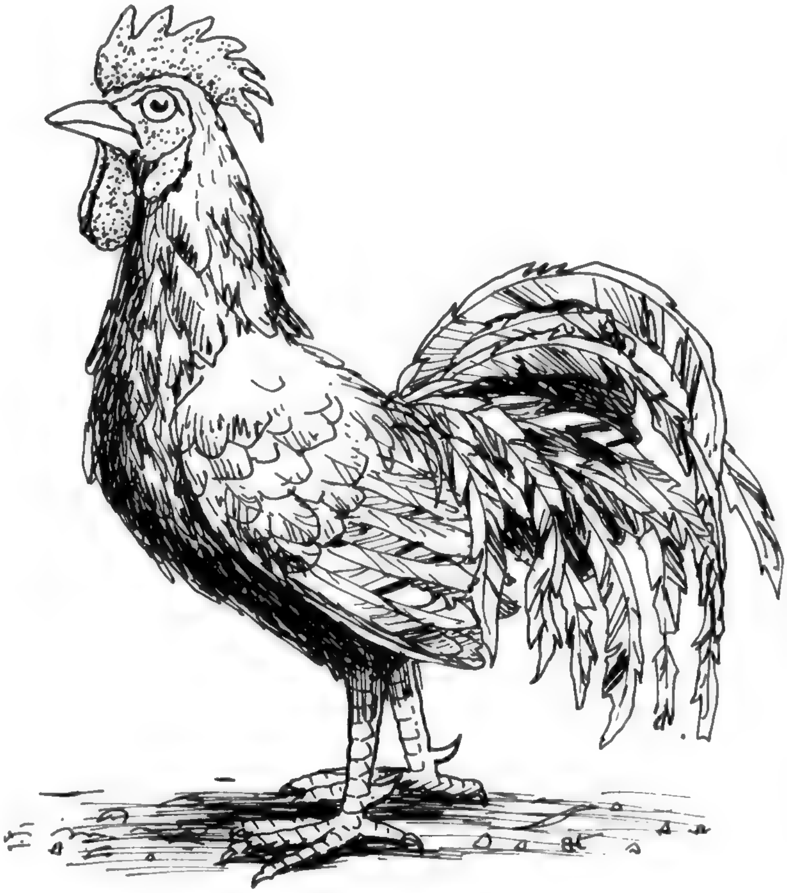
back balefully. He gave another leap and was back on the window sill. I decided to leave him where he was.

At two thirty I discovered another of Perce's nocturnal habits. He had nightmares. The noise of a snoring rooster is nothing compared to his nightmares. In the morning I rang my friend.

"This is impossible," I announced.



"Nonsense," she soothed, "I'm sure you'll learn to manage him. He's very scared of brooms," she offered.

I took up the kitchen broom and advanced on Perce, who'd perched back on the window sill for a mid-morning nap. He retreated. I chortled. I brandished the broom in the air. Perce ran for the creek flat. I put the broom back in the cupboard triumphantly.

Ten minutes later he was back.

I could win the battle with Perce but never the war. No matter how long I pursued him with the broom he always returned. I was his harem, the window sill his throne, and by George I was going to be protected, like it or not.

I got used to the snoring. Almost. But not the nightmares. My husband of the time came back that weekend. "My God!" he shrieked at 11 pm, "What's that?"

"That's Perce," I informed him. He wasn't impressed. He was less impressed three nightmares later. Even less impressed after Perce had gouged his knees before breakfast.

Perce could tell a man at thirty paces. No matter that he could see no higher than their trousers. Unisex jeans didn't bother him. He could smell the hormones.

Perce never attacked directly. He was no fool. He waited till the male back was turned and then he leapt. Spurs out, beak agape. No man could turn his back on Perce. Not safely.

The purchase of chooks became more urgent.

Perce liked the white leghorns. They sailed across the flat in full feathered regalia like sailing ships before the wind, and Perce strutted after them, abandoning me for half a dozen feathered bums. Not that the chooks took much notice of Perce. Aristocratic creatures, they rarely looked down that far. But Perce was happy. Nights became more peaceful.

It was essential to warn male visitors though. Tactfully.

"Look, it's very kind of you to offer to get the eggs/ lock up the hens/ take the scrap bucket over. But you see there's this rooster...."

The men of course would scorn the rooster, no cowards they. They wouldn't even take the broom I offered to protect them. And return ten minutes later with bleeding knees and a loss of machismo and be discreetly doing something else at egg collecting time next morning.

Some of course learnt to handle him, brains above chauvinistic brawn. They'd accept the broom and hold it valiantly. And never turn their backs. It's quite an art collecting eggs in a low chook house on rough ground while always keeping your face towards a rampant rooster. But just once let him get behind you, and you were undone.

I don't know how old Perce was. Only a decade of his history was known. But he was found one morning by a male visitor, crumpled up by the henhouse, very small and dead. He was quite tiny without his strut.

I buried him under the oranges by the chook house. Maybe his ghost would keep the foxes away. Perhaps it did for a time.

That was years ago. The foxes are at the chooks again, white feathers blowing under the orange trees. The shade of Perce no longer leaps. But the price of freedom was eternal vigilance against a fluffy footed rooster with a macho pounce.

Remote area power systems

by Peter van der Wyk

Nimbin, New South Wales.

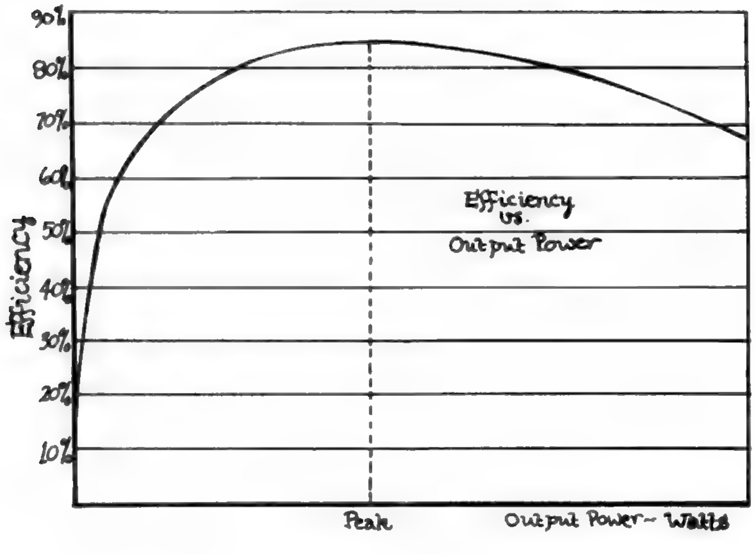
I HAVE noticed over the years that whenever I hear mention of remote area power systems either in items in the media or in government brochures, solar electric power is still regarded as one of the less attractive options. This option would have been considered against other options such as:

- being connected to the grid if a power line is anywhere within cooee.
- Diesel generator.
- a hybrid system consisting of a multiple choice of any of the following: diesel, petrol, solar, wind or hydro.

If you dig deeper you usually find the recommendation against solar electric power is based on assumptions of a very wasteful lifestyle.

The first thing that is taken for granted is that the whole house ought to be the standard 240 mains type system (that is 240 volt lights and power points throughout). This would then dictate a substantial battery bank powering an appropriately sized inverter to cope with everything being on at the same time. This is exactly as you would expect to find it in the average suburban household: lights, stereos and TVs must be left on in case someone might go back to the room some time later.

If you refer to the graph (Figure 1) I have presented a fairly typical performance curve of a very typical battery bank to 240 volt AC (Alternating Current) inverter. You will notice from this that at its peak you may expect 85 percent efficiency from a modern solid state inverter and the further the point is (wattage rating of appliance) from this peak, the more inefficiently the inverter will deliver that power. This fact seems to suggest that you may as well turn on several things at once, at least until you start coming somewhere nearer to this peak. There are some very important oversights in this argument.



If you look at the type of electric gadgets that you may find in the average home you will see a lot of electronic things dependant on getting their power supply via a transformer. The transformer uses the high voltage to generate a much lower voltage. If you then study this appliance (stereo sound system, radio, TV) any further, you will see that in most cases the power may well be supplied by a low voltage DC (Direct Current) power supply without needing the transformer and could easily be supplied by a battery bank.

Inverters

One of the more annoying aspects of inverters, or at least the more common inverters which are either square wave or stepped wave, is that they can produce an annoying hum on your stereo equipment. With some effort this can be minimised or filtered out, but at the same time introducing another level of inefficiency. If you could run it directly from a low voltage DC supply you wouldn't get any hum. The other options are to either run your hi-fi directly from your petrol or diesel generator or to get a much more expensive solid state inverter that mimics a sine wave, or an inefficient motor generator (low voltage motor coupled to a high voltage generator) type of inverter from which you cannot expect greater than 50 percent efficiency.

Low voltage appliances

Both the inverter (producing high voltage AC from low voltage DC) and the transformer (producing low voltage from high voltage AC) are considerably less than 100 percent efficient, and powering one with the other is just compounding the inefficiency. Why can't you just run these type of gadgets direct from the battery bank? I certainly can't see any reason other than the availability of low voltage gadgets. Where you do need the higher voltage, such as for a cathode ray tube (TV picture tube) or electric fence (which are both much higher than 240 volts) you would still need a dedicated inverter (designed specifically for one job alone) to supply that voltage. Such an inverter should be running near peak efficiency at all times.

Australia still has vast areas that are remote in the sense that they are not within COOEE of any power grid. Considering these facts, isn't it sad that the Federal Government has recently put the 12 volt TV into a different taxation bracket. The 12 volt TV is in a higher sales tax bracket because it seems to be regarded as more of a luxury item than its 240 volt counterpart.

And what should we do about other appliances such as the following labour-saving devices:

- kitchen items like food mixers and processors
- laundry machines (washing machine, spin drier)
- workshop tools (drills, grinders, lathes etc)
- sewing machine, vacuum cleaner.

There is no reason why any of these appliances could not be run just as well, if not better, if they were supplied with an appropriate low voltage DC motor.

Good enough for cars, then good enough for houses

In a car everything from cranking the engine to blowing the air through the air conditioning unit is done quite adequately with low voltage DC. In fact it is generally recognised that low voltage DC motors have more torque than a 240 volt motor of the same wattage rating (power consumption). Why are 12 volt vacuum cleaners then so weak and gutless? Because they have been designed to be cheap and not to use too much power to make the battery last longer. We may take a long time to vacuum the floor with a device with poor suction because it is designed not to use too much power, when the same job could have been done using more power but in shorter time.

For appliances that are designed to generate heat, such as a stove (be it for cooking or for room heating) and hot water system, there are alternative ways to generate that heat. There may be number of options to choose from including bottled gas, firewood, sunshine, bio-gas or producing the heat electrically if the electricity can be generated cheaply enough. With the present price of photovoltaic panels (solar electric panels), this option is not in the race.

Lights on the other hand present a much brighter picture in the low voltage arena. With your normal incandescent type light bulb (such as originally developed by Edison) it is generally appreciated that the low voltage version is a lot more efficient than the high voltage equivalent (in wattage).

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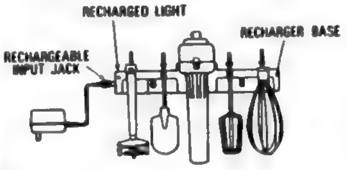

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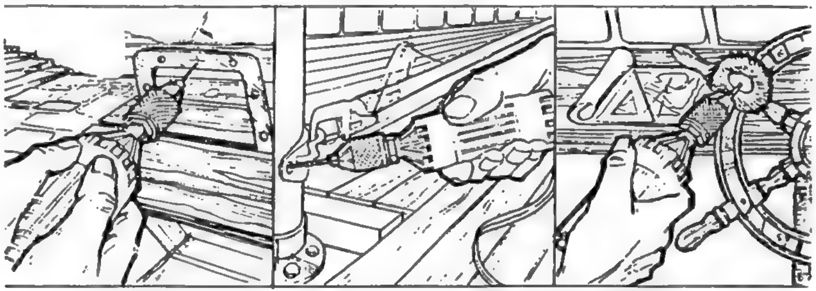

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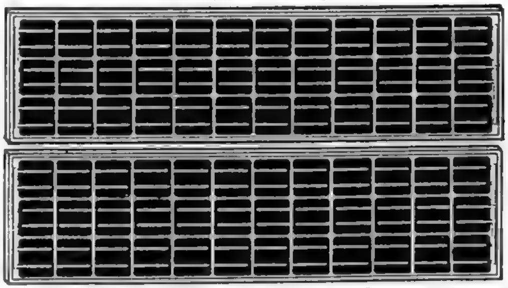

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What I am saying is that for the same number of watts (measure of power) you can produce more lumens or candlepower (measure of brightness) from a low voltage light.

This is because the light is produced by a thin filament which, with the current flowing through it, glows because of the temperature reached by the filament. It is the resistance of the wire that mainly determines the temperature reached by the filament. The length of the filament is determined by the voltage which is expected to flow through. The higher the voltage the longer and the thinner the filament needs to be in order to produce enough resistance (to generate the heat in the filament). Consequently low voltage light bulbs are more robust and can be run at a higher temperature because they are not as fragile. If you look closely at a 240 volt incandescent light bulb you will soon see what I mean. See how the filament is spun into a coil of very small diameter which is then spun into a larger coil. This coil is held by a series of special little suspenders into a horse shoe shape — all this to create sufficient length. Now compare this with a very low voltage light bulb.

Quartz-Halogen bulbs

A Quartz Halogen (QH) bulb is designed with the use of special materials to be able to be run at a higher temperature than the old vacuum bulb. These QH bulbs will operate at white-hot temperatures whereas the vacuum bulb hovers somewhere between red and yellow hot. These bulbs again can be designed to operate on a low voltage system more efficiently than on a high voltage one. If you consider the price of photovoltaic panels you can see that spending a little extra on more efficient lighting can help you save in the overall size of the solar array. You also gain the benefit of having a superior quality of light (a spectrum similar to daylight).

Even with fluorescent lights there is an argument against running them from a large central inverter. The fluorescent tube, as you may be aware, works on a completely different principle to the incandescent bulb. It doesn't have a filament but causes a special mixture of gases to glow as a result of passing an electric spark through it. In order to overcome the inherent electrical resistance of these gases the voltage needs to be in excess of 100 volts. By increasing the voltage above this level any further does not make the fluorescent tube any brighter. You don't need to boost your voltage up to 240 volts if 120 volts will do the same job. In fact it is the amperage (determined by the size of the tube) rather than the voltage that determines the brightness of the tube. By doubling the voltage, you are then doubling the power consumption to achieve the same result.

There is a new development in fluorescent tubes known as the hybrid fluoro because of the cocktail of gases incorporated into it. Without going into detail, these tubes display a more complete spectrum and are brighter than the equivalent fluorescent tube. These tubes are commonly bent into a U shape rather than the more familiar straight tube.

There is another reason for running the fluorescent tube from its own little dedicated inverter rather than from a larger inverter. The standard household inverter is designed to produce 240 volts at 50 cycles per second (hertz). At this rate, the fluoro tube produces a flicker which is too fast to easily notice but slow enough to have an irritating effect on the nervous system. The little inverters dedicated to running these fluoro tubes produce an AC waveform at several thousand cycles per second, which is too fast for the retina to perceive or to irritate the nervous system.

In the average 240 volt household there is no attention paid to how much power an appliance uses. With refrigerators, for example, the emphasis seems to be on space saving rather than efficiency, hence they have thinner walls but need more power to stay cool. Ideally, the refrigerator should be of the low voltage compressor motor type and preferably be top opening (so that the cold air doesn't fall out when you open it).

Another argument in favour of low voltage is the safety aspect. DC is safer than AC. Anything less than 120 volts DC is not considered lethal, whereas with AC you need to come as low as 32 volts! There is still a fire hazard however, with low voltage DC, and so you must protect the system with the appropriate fuses and/or circuit breakers.

To make a solar electric power system more feasible you need to go a lot further than just imitating the suburban house.

If we look at the state of the planet Earth we shall see that it is very important to learn to live a less wasteful and more efficient lifestyle whether we are on the grid or not. And as the Science Minister (Barry Jones) says, we are all prone to becoming zombies if we don't show a bit more initiative and enthusiasm. I agree. We need not accept everything the way that God (or the manufacturing industry) provided it. What we need is a group of bright people to investigate and develop a range of low voltage options.

Rainbow appliances

The Rainbow Power Company of Nimbin, northern NSW, puts a sizeable proportion of its revenue and expertise into investigating and researching the kinds of issues raised in this article. We have developed several low voltage DC kitchen appliances. We specialise in high efficiency low voltage lighting. We will soon be marketing a modular hi-fi system (including turntable). We are developing a low voltage washing machine (I have a custom-built version that works excellently).

We were only incorporated as a company as recently as July 1987 but I believe we are on the right track. We have already achieved a great deal in our short history and I'm sure you shall be hearing more about us.

If you want some advice on a more sustainable alternative to a reasonably comfortable lifestyle, come and ask us about it (or write to us) — we are not just selling it, we are living it.

A needless train disaster

by Antoinette Shanahan

Goongerah, Victoria.

GOONGERAH is a small picturesque valley in the heart of the towering forests of East Gippsland in Victoria. It is also the home to 40 or so New Settlers who have developed into a cohesive and supportive community. Mostly everyone grows their basic foods and there is a good deal of bartering or selling of milk, meat, preserves and other occasional delicacies (cheese, wine . . .) making the 1 & 1/2 hour drive to town a bi-weekly or monthly affair for most.

A Goongerah working bee.

The focus for the community is the local hall. There, on Saturday nights, people get together to watch films from the State Film Library, chat, and catch up with friends from neighbouring communities (Tubbut, Bendoc) who often come to Goongerah for the Saturday night's entertainment. Attached to the hall is the school room — also an important aspect of the social fabric of Goongerah. Although the school age children study by correspondence, two days a week all the kids get together to do extra-curricular activities with parents and other interested people from the valley.

Goongerah also has a community bank, where members put in regular contributions and then at quarterly meetings decide how to spend it. Recent purchases include a fruit press, a fire trailer and pump, and materials to build a ferrocement water tank, now in use at the hall. There are group working bees on community projects and also on people's farms. For creative and intellectual expression the community produce a monthly magazine, *The Local Rag*.

It would not be outlandish to suggest that the people of Goongerah are perhaps the luckiest people in the world — or were — until a short while ago. In October 1987 they found out for certain that the proposed Very Fast Train (VFT) to run from Sydney to Melbourne via Canberra intends to run right through their valley. With 30 trains a day running each way at 350 kmh and louder than any suburban train, the very essence of Goongerah — peace and tranquillity — would be shattered. The companies involved, BHP, TNT Australia, Elders and Kumagai Gumi are keen for the project to go ahead and are currently conducting a $6 million feasibility study. If the train goes ahead Goongerah will not be the only place or dream to be destroyed. Many other rural people will have their lives' work swept out from under them. The train will split Victoria's largest area of dense forest (East Gippsland forests) in two, threatening its integrity as a wilderness area and severely disrupting the movement of the abundant wildlife.

The question needs to be asked: Do we really need a train that takes three hours to travel between Sydney and Melbourne? (It's a long way — it should take a long time!) Trains are generally an excellent form of transport. They are fuel efficient, publicly owned, and cause minimal environmental impact. But the VFT is in a different league. It is to be privately owned. To travel fast it cannot afford to twist and turn so the route will not conform to the natural landscape. Instead engineers will blast, flatten and rearrange mountains and valleys to suit the straighter lines the train needs. It will not be affordable to the poorer sectors of the community that most need trains.

Earth Garden readers are well aware of the dubious direction our society is going in — using up our natural resources as if they were endless. We need to curb our insatiable desire for progress and recognise the natural limits the planet places upon us. Somewhere, sometime we have to say 'enough!' and the people of Goongerah have decided to say it.

If you would like to help please write to the following and demand that there be a major environmental and social impact study into the train with the option of there being no suitable route.

Neville Barwick, Victorian Ministry of Transport,16th Floor, 589 Collins St, Melbourne, 3000.
The Ministry of Transport in NSW, PO Box K534, Haymarket, 2000.
The Federal Department of Transport, GPO Box 594, Canberra City 2601.
The Ministry of Planning and Environment, PO Box 2240T, Melbourne 2000.
VFT, GPO Box 2188, Canberra, ACT 2601.

Copies of letters sent to us in Goongerah would be appreciated. For more information write to Antoinette Shanahan, RSD Goongerah, Victoria 3888.

The sounds and thoughts of living in the country

by Pamela Odijk

Wauchope, New South Wales.

"NOW what could be better than this?" I asked Herman one morning. "Breakfast of scrambled eggs from our own chickens with parsley fresh from our own garden followed by toast and home made marmalade of fruit from our own trees and genuine Dutch coffee with a million dollar view!" (The coffee was a present from in-laws in Holland. We sometimes even have home grown and processed coffee from my parents who live at Buderim in Queensland).

"Can't think of a thing," came the reply.

People in the city would pay a small fortune for this simple experience which is for us everyday. And if you were to buy this in the city, part of it would be fake — either 'plastic imitation' country food or a phoney concocted view.

I often wonder if country people really appreciate the things they have. I am sure they do but probably not quite in the same way as rat race refugees. Perhaps you have to experience the opposite to know its true value. For most city people breakfast is either not at all, or toast, instant coffee and a rush. Even if you insist on a proper cooked breakfast (as we used to) it means getting up even earlier, being organised with military precision with one eye constantly on the clock. And the view? Well you have a choice — reasonably pleasant but with the sound of peak hour traffic constantly on the move, or views of the concrete jungle dominated by views of other concrete blocks of flats nearby. You will have to rush and gulp your breakfast down but never mind — it will shake down as you jolt your way to work in the bus or train. Perhaps the option of no breakfast has some merit after all.

From our breakfast table we can look down the hill, past where the chicken and duck houses are obscured by trees and shrubs, to the river where we sometimes go fishing. Well, Herman does the fishing. I do the reading and knitting. There are lots of fish in the river and Herman usually catches some even if the fish are forewarned of his presence and intentions. I am sure that fish, no matter where they are, know immediately when he has left the house and send out fish scouts to warn the others.

If we depended entirely on fish for food we would starve. I have even known a pelican (who keeps an eye on nearby fishermen to intercept fish as they are being reeled in) give up waiting for Herman to catch something. However, it is not for the catching of fish that fishing arose. You can sit around, listen and do nothing while at the same time satisfying those busybodies who insist you should be doing something. Last time we went fishing we caught two fish, an eel and a beer glass! I caught the beer glass.

We've spent some very enjoyable hours sitting in the boat (on permanent loan from our neighbour Lance), quietly listening to the sounds of cattle, dragonflies zizzing, wind blowing the rushes, the fish jumping, ducks quacking and the whirring of their wings as they take off in flight.

I've also learned to listen for the sounds of cars. They pass so infrequently that you listen to each one and know the sounds of neighbourhood cars. You know instinctively if there is a strange car or truck passing. From my study window in the mornings I both see and hear the school bus as it picks up the children further down the road, and the little yellow mail car as it makes its visitations up the hill. I watch to see if it stops at our box up at the road, and hear the comings and goings of the service vehicles on their way to check rural power supplies and the like.

There are other country sounds: different birds, and as with the cars, I hear when there is variation and go to investigate. I am likely to find a whole flock of greedy rosellas eating berries or a flock of galahs and occasionally

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some magnificent black cockatoos. The magpies, crows and kookaburras are always around of course but you can tell when they're up to something. Their raucous screaming accompanied by swooping behaviour tells me they're probably harassing the big goanna again. It lives somewhere among the trees up the hill from the house near the water tank. The kookaburras chase it out, down the log wall at the back of the house and across the back lawn. The goanna usually runs along close to the house wall and finally takes refuge in the thick broom bush near the garden.

There are other comforting sounds like the wind in the treetops and the crackling of the open fire on a winter's night. I don't ever want to be parted from these sounds ever again. And they are sounds that city children may never hear. I am convinced that there is a whole generation of city kids who mostly only hear what comes through a set of headphones. I think some of them are born with headphones. I read somewhere recently that some children in Chicago thought oranges were made in a factory. This kind of information doesn't amuse me — it frightens me. What other unrealistic pictures do these children have or will they acquire of the world in which they live?

The sounds of inquisitive chickens is interesting. Because our hens are allowed to wander wherever they like during the day, some of the more inquisitive have learned to negotiate the additional three foot barrier of chicken wire threaded through the vegetation to encourage them to go down the hill and not come up to the house. The trouble with chickens is that you can't toilet train them. The most inquisitive, Henrietta, Hetty and Atilla (you've heard of Atilla the Hen? (sick}) come into the laundry looking for Sam's cat food. I am quite alerted to the sound of beaks pecking on plastic or the curious sound of two hens holding a private conversation about strategy outside the front door, and I give chase with my special 'chicken chasing broom'. There is no point in chasing them without it because they're not even vaguely scared of me. In fact, when I approach my hens they squat down, spread their wings and wait to be patted. I've tried teaching Sam to chase the chickens away but he's terrified of them.

However, there is one creature that doesn't make a sound when it's up to something and that is an inquisitive horse. I looked up from my desk one day to see Shah walk past — off on an adventure with some destination in mind. Somehow he had learned to open the gate. I leaped up and ran to change my shoes and grab my 'Shah catching and leading back equipment' from the garage and gave chase. Herman had gone somewhere with the car so the problem was mine to solve. I was lucky. It was school holidays and three kids walking along the road sized up the situation and had Shah under control. The 'Shah leading back equipment' (bread rolls) was also called upon.

We had a little talk about that incident, Shah and I, and he has agreed, that for two bread rolls a day — and the occasional apple, he won't do it again.

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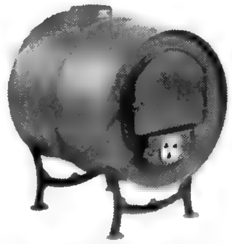

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Write to: HOT DRUM, Freepost 1, Box 3(R), Maleny, Qld, 4552.
(No stamp required) or ring: (071) 942496

Undermining our rights?

The prospect of having your land 'mined out' from under you is one few of us give much thought to. As John Alderson points out in this article, it's an event which isn't as unlikely as you may have thought.

by John Alderson

Havelock, Victoria.

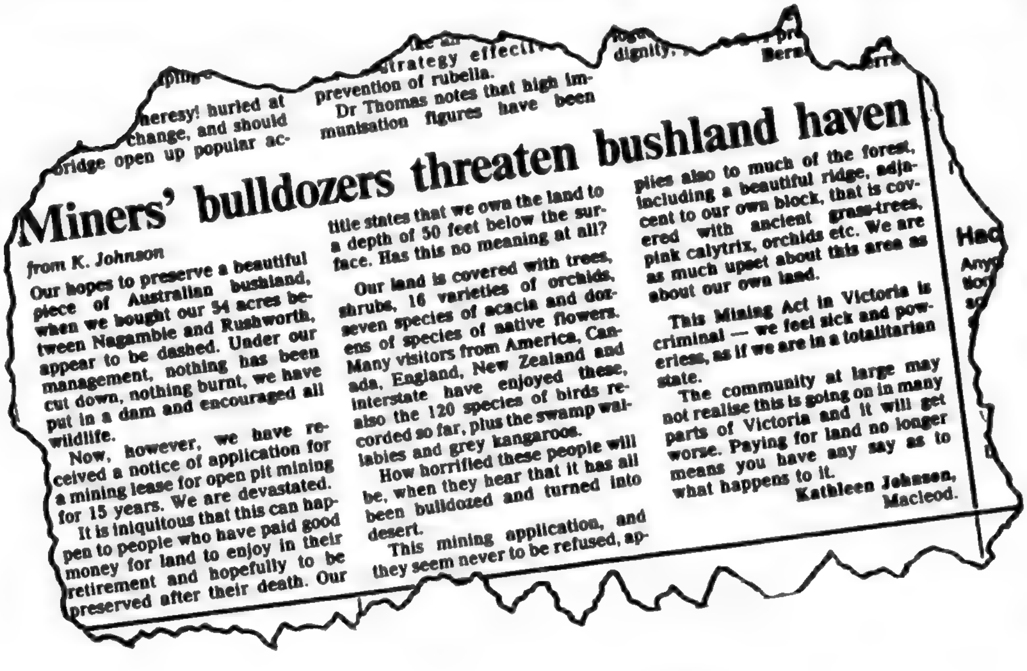
WE WHO live in the former gold rush region of Victoria — the Golden Triangle — have learned to patrol our properties every morning to check if some miner has pegged it out during the night. Needless to say, like burglary and grave robbing, 'pegging out' is usually done at night. After pegging out, the would-be miner refers to the area as 'their land', and after a few formalities, they have more rights to the land than the owner, without the liability of paying rates, taxes or more than token compensation. This applies to Victoria and, as all States seem to share bad laws, I am confident the position is more or less the same everywhere.

By virtue of Cook raising the flag on Australian soil the land automatically became the possession of the British Crown. The Crown, you may be surprised to know, still owns all the land (with a few possible exceptions), and some of us hold our land free of the Crown (freehold) or rent it from the Crown (leasehold). In the first case we pay rates and taxes thereon and in the second rent as well.

This land, when *alienated* from the Crown, has been done so on certain conditions. Regarded as 'waste' ground, the conditions are that it be improved by fencing, buildings and cultivation (implying that the removal of trees and ground still carrying trees, other than fruit-trees, is still regarded as unimproved, despite all the Government's fine words). Our deeds specify that we may enjoy the land to a depth of fifty feet, although there is a proviso that the grantee may sink wells and shafts for water as though there were no depth limitations. The words on the titles go on, with a merciless disregard for punctuation . . .

"Excepting however to us our heirs and successors all gold and silver and auriferous and argentiferous earth and stone and all mines seams lodes and deposits containing gold silver copper tin antimony coal and other metals and minerals and mineral ores in upon under and within the boundaries of the land . . . and also reserving to us our heirs and successors free liberty and authority for us our heirs and successors and our and their agents and servants at any time or times to enter upon the said land an search and mine therein . . . and to extract and remove therefrom . . . and to search for and work dispose of or carry away . . . and for the purposes aforesaid to sink shafts and make drives erect machinery and carry out any works and do any other things which may be necessary to be used for the getting of the said gold . . . (etc) ."

If this were not enough the conditions go on and say virtually the same thing again and round it off with: "PROVIDED FURTHER that this grant is upon this express condition that neither the grantee nor anyone claiming from through or under him/her shall claim to be entitled to any compensation in respect to damage done to the land hereby granted or any part thereof or to any improvements thereon within the meaning of the Mines Act 1915 or of any Acts for the time being in force relating to mining or by the cutting or removing of any live or dead timber thereon or



heresy! hurled at
change, and should
ridge open up popular ac-

strategy effecti
prevention of rubella.
Dr Thomas notes that high im-
munisation figures have been

dignity,

Miners' bulldozers threaten bushland haven

from K. Johnson

Our hopes to preserve a beautiful
piece of Australian bushland,
when we bought our 54 acres be-
tween Nagambie and Rushworth,
appear to be dashed. Under our
management, nothing has been
cut down, nothing burnt, we have
put in a dam and encouraged all
wildlife.

Now, however, we have re-
ceived a notice of application for
a mining lease for open pit mining
for 15 years. We are devastated.

It is iniquitous that this can hap-
pen to people who have paid good
money for land to enjoy in their
retirement and hopefully to be
preserved after their death. Our
title states that we own the land to
a depth of 50 feet below the sur-
face. Has this no meaning at all?

Our land is covered with trees,
shrubs, 16 varieties of orchids,
seven species of acacia and doz-
ens of species of native flowers.
Many visitors from America, Can-
ada, England, New Zealand and
interstate have enjoyed these,
also the 120 species of birds re-
corded so far, plus the swamp wal-
labies and grey kangaroos.

How horrified these people will
be, when they hear that it has all
been bulldozed and turned into
desert.

This mining application, and
they seem never to be refused, ap-
plies also to much of the forest,
including a beautiful ridge, adja-
cent to our own block, that is cov-
ered with ancient grass-trees,
pink calytrix, orchids etc. We are
as much upset about this area as
about our own land.

This Mining Act in Victoria is
criminal — we feel sick and pow-
erless, as if we are in a totalitarian
state.

The community at large may
not realise this is going on in many
parts of Victoria and it will get
worse. Paying for land no longer
means you have any say as to
what happens to it.

Kathleen Johnson,
Macleod.

therefrom for mining purposes within the meaning of the said Acts or for any purposes authorised by the said Acts."

That was a 1920 Grant. A 1911 Grant repeats the landholder's liability to allow miners and their bastardry to the land a third time with even more horrific detail.

If it seems that this was taken from a document of the Dark Ages it is, because these Grants *do* date from the Dark Ages: feudal times. There have been certain modifications since the Mines Act 1915: oil and uranium have been added and some rights have been won regarding compensation and improvements. The Crown still owns the land and there is no compensation for land, only for improvements. A recent court case won the definition that heaps of stone and soil on a property were chattels though it seems the Crown still demands a royalty if they are carted away.

At present a miner may not work within fifty metres of an improvement without the landholder's permission, but if this is not given the matter can be taken to the Land Commissioner who determines the amount of compensation! Local miners are actually undermining houses and it seems impossible to stop them.

However, although it is virtually impossible to toss the Mining Acts, the Mining Acts can be used (sections of the Mines Department have made a determined effort to prevent any other government department or service from interference). All excavations (and most earth-moving), comes under Mines Department Acts and this includes dams, tanks, wells, channels (and certainly roads if they are also used to divert water), and one's power to prevent mining on a catchment area is very wide indeed, but only under Mining Acts. People, literally hundreds of miles away have the right to prevent any acts which will hurt their water supply.

In fact the Mining Acts are more concerned to prevent miners from interfering with each other than they are to protect the people who just happen to live around about and want to grow cabbages. Yet cabbage patches and orchards are protected under the Mining Acts.

Beating them at their own game

People have given thought to having their whole property put under a mining lease and working it themselves. Probably there is nothing the Government would like better because taking out a mining lease is a costly business and would bring the Crown a lot of money . . . money most of us cannot afford. In any case, there is a question of continual working and abiding by Mining Regulations.

I tried this sort of thing myself and argued with the mining inspector that I didn't need to post a $500 sludge bond because there was no sludge. The Department simply cancelled my lease because I didn't pay an unnecessary bond and one their field officer had exempted me from. It is not necessary to register a mining lease if you are working within your own property, as one inspector advised me, but this the Department does not like. Indeed it does not like it! If you have an on-going programme of dam-sinking, earth levelling and channel-making then you might get away with it, and if the land is old mining country then there is usually plenty to do in one's spare time. Prospectors are reluctant to enter a property where earthworks are in progress because claim-jumping can be a costly affair.

A local land-officer told me he met a farmer with a ute-load of star-pickets which he was using to fence his property. As fast as a middle-of-the-night prospector put them in, the farmer took them out, and there was nothing the prospector could do about it. Material placed on one's property without permission can be construed to be a gift from some kind benefactor. Prospectors have now started putting the pegs in Crown Land just outside the property. The legality that this includes the freehold beyond the fence has yet to be determined. At present my own property is within an area about a mile wide and some five miles long which has been pegged, and includes some hundred other properties! The advertisement describing the area only mentioned compass-bearings from a point miles away.

At present it seems that while it is impossible to keep a miner off one's property, you can keep a prospector off. The difference is that a prospector does not yet have a mining claim, so removal of samples requires permission. It is therefore vital not to allow access to any prospector, or for any boring to take place. Yet, much of the local area has been bored without permission and it has proved impossible to stop boring, despite its illegality. So if you find somebody taking samples from your property you are dealing with a thief, so don't have too many scruples in regaining your property.

Environmental effects

The present Victorian Government has made it clear to we farmers through their officers (naturally they'll deny it if it's brought up against them) that agriculture has no priority at all. However, 'way of life' and 'conservation' are still available if enough stink is kicked up. With regard to the latter there are several neglected aspects.

1. Sinking a shaft can let the water into the deep leads. This can have several effects. **a.** It results in the loss of valuable surface water on which certain towns (remember, towns are important to Governments) depend. This water entering the deep leads is either lost, or raises the water table, which has a bad effect on the salinity problem, often many miles away. (Salinity is a matter which presently is a great worry to the Government, or at least they say it is).

b. Water entering these deep leads, and ones not so deep, causes soil subsidence and lets down roads, railways and even Government buildings, and where this may happen is unpredictable.

2. If the shafts reach underground water, the chances are that it will be salt. This has to be pumped out with considerable injury to nearby land and creeks with a build-up of salinity. Mines have to be watched because many put down bores with the intention of using it for their working,

and however careful they are with recycling the water the earth they process will be left salty and this will drain out over the years.

3. Mine holes can never properly be refilled and will continually subside. They still fall in after 3000 years in Europe.

4. Mining ruins the ground and it can never be the same again. In the bush the areas already mined recently are still bare after several years and will remain bare for decades. Yet anyone else removing a solitary wild flower is subject to a hefty fine!

5. Almost all gold mining uses mercury for extraction. The loss of mercury is considerable and an ever increasing amount of mercury is entering the environment.

It is clear that the law has to be changed. Any law which sets at nought Common Law is a bad law, and the Mining Acts do this.

They also seem to run counter to some of the rights defined under the Charter of Human Rights. The Mining Acts also run counter to the doctrine of Eminent Domain, that is, they are against the greater good. Gold miners do not even pay taxes!

If you live in a part of Australia where there's a chance of mining — be warned and beware.

Fighting the pong

by Greg Baker

Braidwood, New South Wales.

OUR philosophical approach to life means we do all the jobs that need to be done around our place. We never ask for assistance from friends or pay anyone to come and work for us. That means of course the pleasure of accomplishment is all ours.

It also means that when there are nasty, smelly jobs, we are the lucky ones to do them. They're never interesting or exciting and sometimes there is not even a sense of achievement at the end. But they have to be done.

Take the drains, for example. Every so often the pipes need cleaning or the grease trap needs emptying. Being of stronger (or thicker) mettle than most people I operate without rubber gloves. Bare hands mean not only greater feel for the job and greater control, but also not having to find where I've left the rubber gloves at the end of the last job.

The trouble is, when I finish the job the pong on my hands would kill a Christian Dior perfume tester at ten metres.

It's not only drains either. What about fleshing a skin before tanning or cleaning out the chook run or carrying away the bodies of chooks dead under the run for a week before being nosed out?

When I first did these sorts of jobs I would clean up afterwards with soap and water: litres of water and cakes of soap. My hands looked like those from a soap advertisement but the pong remained. Having recently learned to use a knife and fork I could avoid putting my fingers in my mouth but the reach of a fork is limited and any food tasted the same as the job just finished.

There had to be a better way. Next I tried soap, water and a scrubbing brush. The result at mealtimes was the same but my hands were red and sore like from the X brand in the soap advertisement.

Sand soap had exactly the same effect. I tried scented soap but the pong penetrated even that with a result like a sewer flooded flower shop.

As one who is very fond of his food, this was all very disappointing. Whenever a nasty job had to be done I would have either to endure starvation afterwards or work with a full stomach and a tight belt having stocked up beforehand.

Well I don't often give up. I decided to try soap and water and disinfectant. That worked after a fashion. It did hide the smell but was reminiscent of having my meals in hospital which made me feel ill. Hospitals seem to do that to people.

I can't say I would have thought of the ultimate in hand pong control by myself. A friend suggested it to me, and being the most gullible person I know, I tried it.

The next time, dead chooks I think it was, I washed up with soap and water. Then I squeezed — wait for it — a couple of centimetres of toothpaste onto my hands, lathered that well in and washed it off.

For some reason it lifted the smell leaving nice clean hands and enjoyable meals. Not only was it effective it didn't seem to need an advertised brand of toothpaste. Generics like Pink and Blue work as well and are cheap.

If it does that to hands I wonder what it does to teeth?

Don't fight the pong with scent,
raw flesh or disinfectant
Use Pink and Blue
(It's good for you)
And face your meals expectant.

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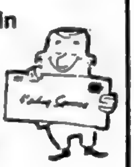

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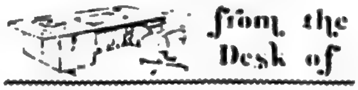

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Bush food: good tucker

by Scott Cane*

Executive Archeologist, Anutech, Canberra.

ONE of the most extraordinary movements seen among indigenous people throughout the world has been the Aboriginal outstation, or homelands movement here in Australia. While in many areas around the world there is a drift in population towards cities and towns, the trend is reversed among Aboriginal people in the Northern Territory and other remote parts of Australia.

Aboriginal people have been tenaciously moving away from European settlements back to their remote traditional homelands. Here people live in often Spartan semi-traditional camps located around windmills, hand pumps or near natural water sources using tin sheds for shelter and storage. Children sometimes go to school at nearby settlements and adults move to and fro for business, health care and to collect stores.

This movement has underpinned a remarkable cultural renaissance for Aboriginal people. The movement seems motivated by various political, social, religious and economic factors, and is being accompanied by a resurgence of ceremonial activity, traditional law and order, Aboriginal land use and education. The movement has also seen a revival in the use of traditional wild foods.

Contempt

Throughout the recent past non-Aboriginal Australians have either been ignorant of traditional Aboriginal foods, or mostly have viewed them with contempt. Wherever advice on land management has been given to Aboriginal people it has usually been to grow European foods, such as oranges, tomatoes, mulberries and grapes.

There has been a conventional view that gathering bush foods was not a viable economic component of outstation life — that in fact the maintenance of European market-style gardens was the only way for Aboriginal people to demonstrate they were serious about living on outstations.

Women at Yaga Yaga in Western Australia winnowing wild seeds.

Aboriginal people seem to have viewed things differently and since returning to their homelands, have revived many traditional hunting and gathering practices. In some camps bush foods now appear to contribute as much as half the food eaten, while in most camps bush foods constitute at least a quarter of the foods consumed.

To give some idea of the significance of this contribution in European terms it is useful to calculate the cost of replacing this amount of bush tucker with European food. Such a calculation reveals the surprising fact that it would cost each group of 500 people living on outstations over $250,000 a year to replace the food they get from the bush.

About 50 native plants and animals are frequently used, and these include edible seeds, tubers, fruits, nectars and a variety of reptiles and marsupials.

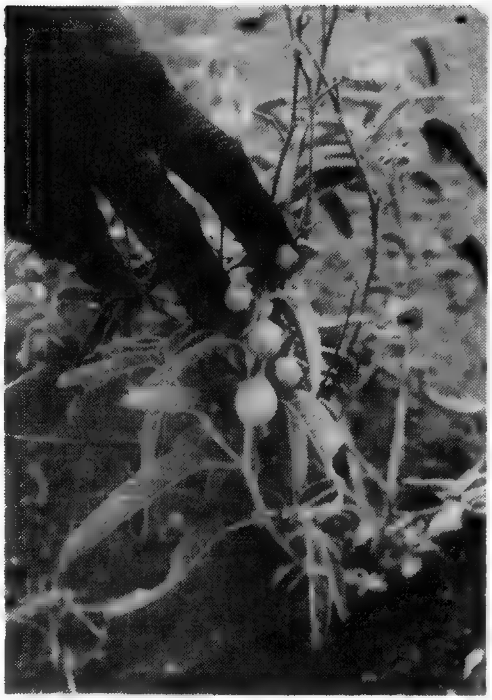
Vitamin C

Most of the fruits which were eaten traditionally are still eaten today. The most important are probably bush tomatoes. These are round, light green fruits which vary in size according to the species, from those about the size of grapes to fruits the size of apricots. Bush tomatoes contain high levels of vitamin C and often taste quite bitter. They are easy to collect and I have recorded people gathering up to 5 kg of fruit per hour. They are very nutritious and contain four to five times the amount of protein and carbohydrate as oranges and commercial tomatoes.

The same sorts of comparisons are valid for other native foods. Underground tubers such as sweet potatoes, native yams and bush onions have a higher nutritional value

Witchetty grubs collected from Coolibah trees.

Native yams are wrapped in a carrying mat made from wild creepers.



Small bush tomatoes, rich in vitamin C.

than their European counterparts. Sweet potatoes and bush onions for example contain more carbohydrates and provide greater energy levels than commercial potatoes and onions. On a good day, and at the right place, a morning's work will see enough sweet potato collected to feed half a dozen people for several days.

There is also a range of other bush plants, such as bush bananas, wild oranges, wild cucumbers, and bush plums which are not as frequently collected. These are usually picked as people walk across the land and make tasty nutritional bush snacks.

In the desert bush plants make up most of the natural diet although animal foods, such as witchetty grubs, reptiles, kangaroos, emus and bush turkeys are also important. The large birds and marsupials are hunted frequently and are baked in underground ovens and covered with hot coals. The meat from these animals is often eaten partially raw, thus very nutritious, but tends to be a little underdone for most non-Aboriginal Australians.

Nutritious

Reptiles are also frequently collected. They are often rich in fat and taste something like chicken. The important thing is that reptiles — particularly goannas — are nutritious and easy to collect. In fact, goannas are as nutritious as steak and are rich in protein, fat and calories. They are as easy to collect as shell fish and fish are for coastal Aborigines. If a woman spends a few hours collecting goannas each morning, she will easily collect enough food to be able to have the rest of the day off.

Bush foods scattered subtly throughout the desert are abundant and easily gathered. This is perhaps all the more surprising given the tortured history of European exploration in the desert; particularly as this history has seen the death of people such as Burke and Wills, Lasseter and Gibson, in what most certainly appeared to be a barren and infertile landscape. There were of course, bad seasons in the past and there were times when the sandy smorgasbord was not as productive as it might otherwise be. Access to reliable water was always a problem but it is clearly apparent that the desert had hidden life-saving treasures from the European explorers.

As Aboriginal people progressively reoccupy their desert environment, and return to many of the same bush resources which maintained their society for thousands of years, and make changes in their lifestyle so important to their culture, we should all feel pleased for their success.

These bush tomatoes were gathered in less than 30 minutes.

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OCTA - AND OTHER - GONS

by Bob Rich

Moora-Moora Co-operative, via Healesville, Victoria.

NON-RECTANGULAR shapes seem to hold a fatal fascination for intending owner builders. There was an enquiry in EG 57 about building octagons and this set me thinking. I have been involved in building five octagonal structures so far, made from timber, rammed earth and mudbricks, so I am able to pass on a few tips.

The first one is that anything which is not a rectangle, or a combination of rectangles, is a great deal more work to build, and may cost considerably more. Polygonal houses look nice from the outside, and can feel nice inside — but aesthetically pleasing effects can be achieved without the cost imposed by complexity.

The Army Engineers' motto is KISS: "Keep It Simple, Stupid!" House design which starts with an aesthetic conception may be extremely difficult from the point of view of other considerations.

It is better to start with a day-to-day analysis of needs of the future occupants. Convenience, suitability, comfort, cost of building, and the cost of running the house should be more important than a preconceived shape. The important aim of ending up with a beautiful structure can be achieved in many ways.

But okay, I can't talk you out of an octagon. What are the problems, and what are typical solutions?

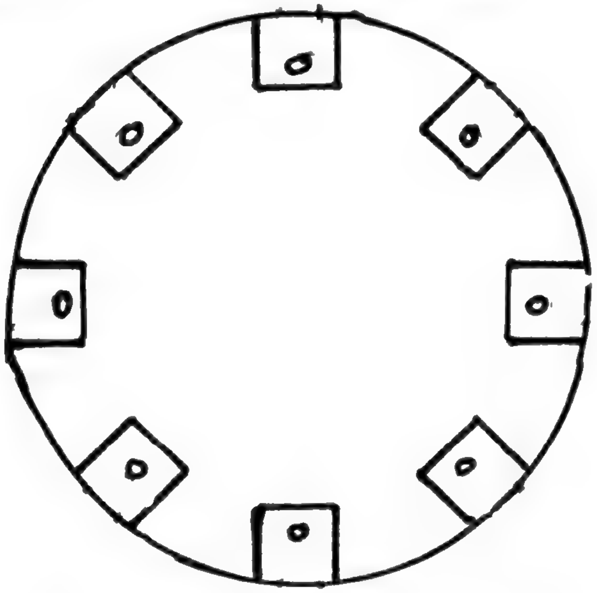

Figure 1. Steel central disc to which the rafters are bolted.

Roof

Structurally, a house has to be designed from the roof down, so we'll look at roofs first.

The simplest way to support an octagonal roof is to have a central post. There is then a triangle of roof going from each stretch of wall to the post. This means that a standard construction technique can be used. The edges of the triangles are hip rafters. The space between has creeper rafters (there is no space to describe the construction of a 'hip roof' here, see page 247 of the *Earth Garden Building Book*). I learned to cut odd angles on the rafters of a two storey, split level, octagonal house. The network of rafters is a work of art, and is proudly exposed. Producing this work of art was a great deal more work than if the ends of the rafters had been square, but at least there were no problems which would have been awkward for a conventional builder.

Bruce, a friend at Moora-Moora, used the same principle when constructing a circular room. The centre support was a welded tube steel structure, which was later enclosed inside a novel fireplace.

One of the reasons people give for wanting polygons is that they like the feel of the space inside. Typically, they resist the idea of having a great big post in the middle. I have seen three other solutions.

For a relatively small span, say two metres radius, you can use a central steel plate like the one in Figure 1. This is temporarily supported until the corner rafters are bolted to it, and to corner supports at the other end. Creeper rafters will still be needed in between these main rafters, unless the span is very small.

Roof trusses

A second solution is to use roof trusses. A truss is

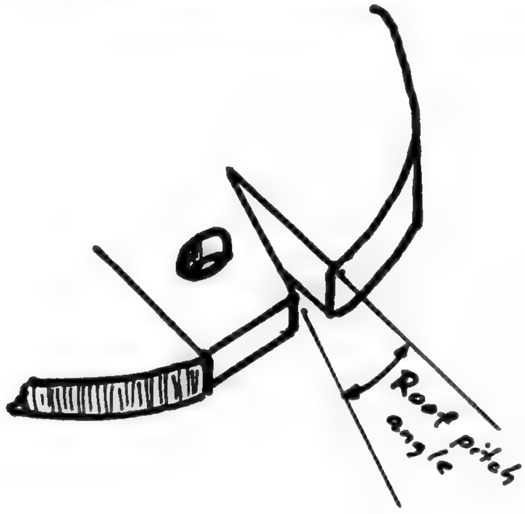

Figure 2. Octagonal truss roof.

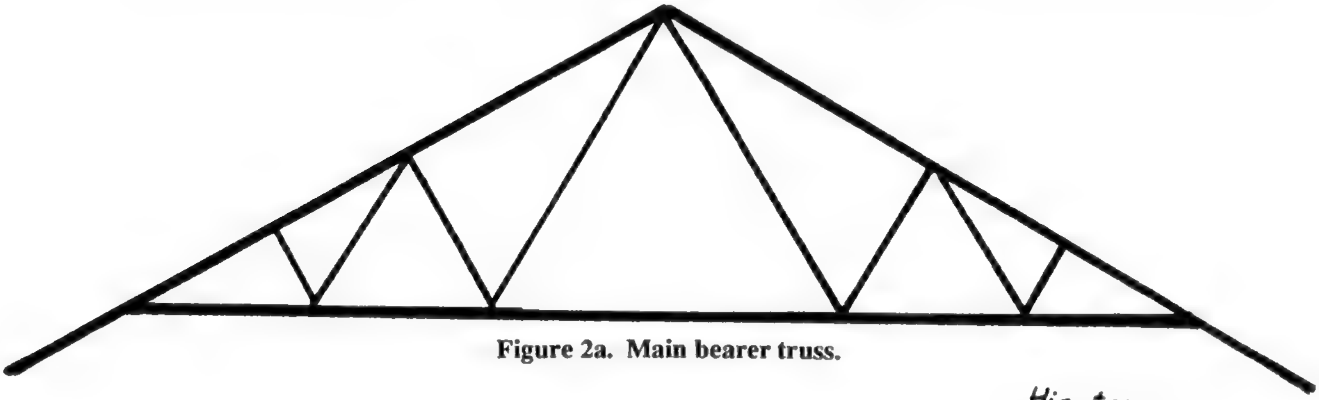

Figure 2a. Main bearer truss.

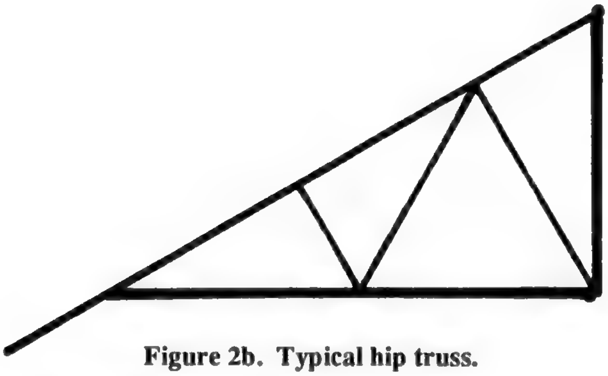

Figure 2b. Typical hip truss.

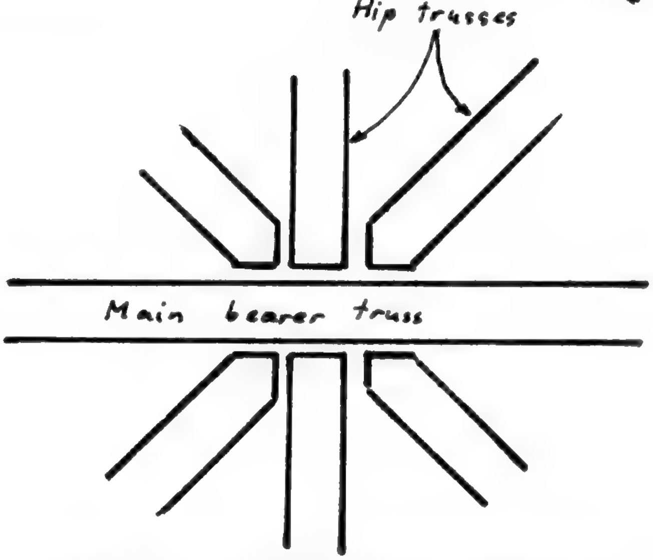

Figure 2c. Centre of the octagon, showing how the trusses fit together.

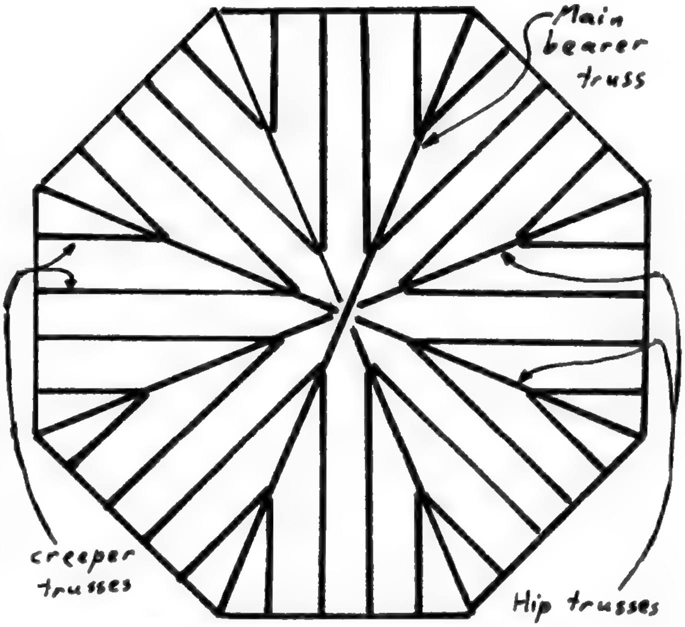

Figure 2d. Octagonal truss roof plan.

a braced triangle engineered to have the same strength as a solid piece of timber of the same shape. Normally, a truss roof is cheaper to build than the same roof shape using conventional techniques. This is not necessarily the case for an octagon, for two reasons:

- one truss has to be very big, with problems of extra bracing, and
- non-standard truss shapes are needed, requiring the extra costs of engineering calculation and one-off manufacture.

Figure 2 shows the details of one layout for an octagonal truss roof.

Gable roof

The third technique is to put a conventional 'A' shaped (gable) roof over an octagonal space. I have helped to build two such buildings, and I hope never to do another. I have tried to show the difficulty in Figure 3. Four of the eight walls can be finished off at the top using conventional techniques. But the four walls which are at 45° to the ridge line must have sloping tops, because the roof line rises as the wall approaches the centre line of the house. This doesn't make the job impossible — but anyone who designs a thing like that should be forced to build it themselves. For example, when doing the spouting, we had to construct corners which were 45° in the horizontal plane, and 22.5° in the vertical plane.

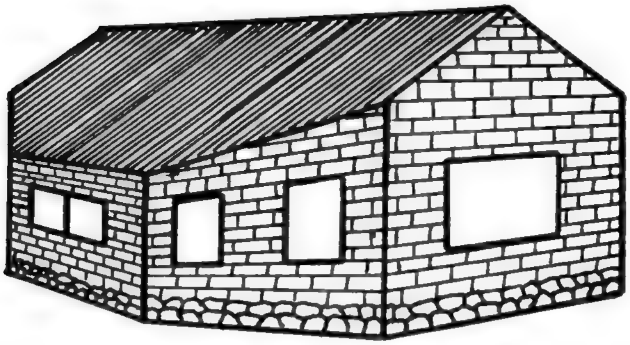

Figure 3. Octagonal house with gable roof.

Internal

The second set of problems is inside the building: placing of internal walls, use and allocation of space, daylighting, and extra work in installing built-in furniture, timber floors, ceilings and carpets.

An internal wall coming from a corner will leave two small triangular areas which are wasted space. If possible, it is better to have internal walls butting against the face of an outside wall somewhere. The 135° open corner is then usable space. However, this requirement limits internal design considerably.

I once laid half the timber floor for an octagonal school building. This involved a section where the ends were at right angles to the run of the boards, and a section where they had to be cut at 45°. The second section took me almost 1 & 1/2 times as long, even though I was covering less area, each run being shorter than the one before it. This was because a 45° cut is 1.414 (say 1 &1/2) times as long as a square cut across the same board.

Nice effects can be created by things like built-in box seats in corners. Bits of unusable space can be hidden inside built-in cupboards.

The provision of daylighting is also a problem for any house which is more than one room deep, and this would include most polygonal houses. Energy efficient house design dictates that most of the window area should face approximately north. Ideally, there should be no windows facing west.

The solution is to let in light through the roof. Do not use materials like corrugated fibreglass which are inflammable. Also, skylights are a source of heat loss in winter, and a high risk area for roof leaks. It is better to use clerestory windows or dormers.

Footings

One of the advantages often claimed for polygonal buildings is that you get more floor space enclosed by a given length of wall. This is true, although, as just stated, you have to look at problems like daylighting inside, and making the extra space usable by clever layout. However, where a concrete slab floor is used, the saving on the walls can be cancelled by the extra cost of concrete for the floor.

Figure 4. Concrete slabs.

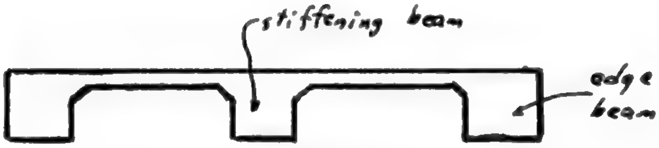

Figure 4a. Slab in cross section.

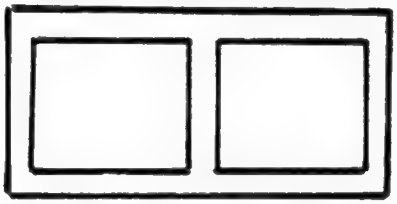

Figure 4b. Rectangular slab.

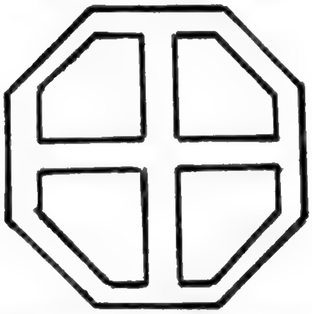

Figure 4c. Octagonal slab of same area as 4b.

This is because, for most foundation soils, a large slab needs 'stiffening beams'. This is a trench dug at a suitable spot under the slab, and filled with reinforced concrete continuous with the slab (Figure 4). For a given load and soil type, regulations might specify a stiffening beam at 5 metre spacings. A 10 x 5 metre rectangular slab will then need one stiffening beam of 5 metres. An octagonal slab of approximately the same area will need two stiffening beams, each 7.78 metres in length. This is a significant amount of extra reinforcement and concrete.

A floor on the ground is an essential element of energy efficient house design, because the floor acts as a heat sink and evens out temperature variations. But this doesn't have to mean a concrete slab. You might consider bricks on a sand base (if you use secondhand bricks you will be caring for the environment: the energy cost for the manufacturing of bricks is enormous). Or, if you can convince your local council, you might try an earth floor. Ian Factor has described the construction of earth floors in EG 40, and his article is included in the *Earth Garden Building Book*, on page 91.

There is nothing wrong with building a sculpture which is suitable for living in. If your heart is set on an octagon, go ahead by all means. But first make sure you know what you are getting into. Compared to building a simpler design, you will need extra skills, extra time, and probably extra money.

Season by Season

by Jackie French

Preparing for the hungry gap

THE hungry gap is early spring. It's the time when you have eaten most of the surplus from last autumn — the apples, pumpkins, old carrots and parsnips in the garden — but the new season's crops are still months away from maturing. A few hundred years ago this was the starvation time, the scurvy time, the plague time, when the weather was warming up but diets were still poor.

Any fool can have a surplus of late summer tomatoes. The test of a good gardener is whether they are eating their produce in spring.

So this is the evaluating time in the garden. What you are growing now is by and large what you will be eating in winter and spring: the carrots, celery and silver beet you planted last spring, the pumpkins and melons ripening on the vine, the caulies and other brassicas put in for maturing in winter and spring. If you don't have enough crops in now you will either be hungry or shop at the supermarket. If you want fresh food in spring it should be growing now.

Anything you plant now must either be quick maturing, or the sort of plant that will go quickly to seed as soon as the weather heats up, in other words, broad beans, peas, cauliflowers and broccoli.

What to plant

Orderly gardeners will have been preparing for broad bean sowings by adding potash in wood ash or comfrey or good compost to the soil. This improves fruit set in both hot and frosty conditions and makes the plants much less susceptible to chocolate spot.

The classic time to plant broad beans is May. I plant them any time of the year. Broad beans will crop except when the temperatures are too hot for them to set fruit, or when frost burns off the blossom. In hot areas try shading the flowers with a taller crop or pergola. In cold areas try growing them in the most sheltered spot you have. Even if the flowers are frosted off, the plants will survive and set fruit as soon as the frosts finish.

I plant broad bean seed or pea seed as close together as possible — a couple of centimetres between each seed. Growing plants this close together is possible if the ground is in good condition or if you are prepared to mulch with good compost or give liquid manure to help it along.

Close planting means that the tall plants are less likely to 'lodge' or tip over in wet or windy weather. They'll support each other and create their own slightly-more-frost-resistant microclimate. You'll also get a bigger crop in a smaller area: less area to water, fertilise and weed.

Picking is of course more difficult with close planting — you need to part the plants carefully. On the other hand neat straight rows are just yelling out for the birds to come and harvest too. I find that large untidy clumps fare better with invading bower birds, currawongs and rosellas than long inviting rows.

Other crops to plant

If the soil still feels warm when you stick a couple of fingers in it, and you haven't ever tried spinach —

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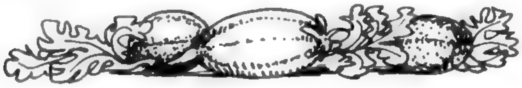
real English spinach, not the smaller New Zealand spinach or big leafed silver beet — put some in. The leaves are smaller, softer and more delicate than silver beet and run to seed in hot weather, though new varieties are a bit more bolt resistant. The taste is so delicate and delicious that they're worth the effort, and like most green veg, stale spinach bought in supermarkets has lost all the freshness and subtlety of flavour.

Pick the leaves as young as you want. Steam them, stuff them or sauté them in butter. There is an old glutinous French recipe that I have never tried. You pick a kilo of spinach, and sauté it in butter till the butter had disappeared. Next day add more butter and sauté again. Do this for a week. At the end of the week eat the resulting buttery purée: very rich, very delicate, and just enough for one. Without going to these extremes though, well buttered spinach purée on toast is a winter delicacy.



Onions can also be sown now. Different varieties of onions should be sown all year round. Start putting in the brown skinned long keepers now till the end of winter. Pukehoe is a fine textured good tasting excellent keeper but there are so many onion varieties it's fun to experiment. Like spinach, you've never eaten onions till you've had fresh ones. Many gardeners don't bother growing them because they are slow, hate weed competition and are so cheap. But when you can only buy white, red or brown onions in the shops a true onion taste is a luxury.

Only fast maturing caulies planted now will mature by winter in most areas — they need three to five months frost free maturing. Go for the smaller cabbages, or try Chinese cabbage or Chinese celery. The longer maturing brassicas will still be useful, though — they should mature in a burst as soon as the weather heats up in spring, and by then they will be one of the few things producing in the garden.

If the soil is warm keep planting winter **lettuce** now too — long maturing types that will stay firm leafed and crisp through winter and not go to seed till spring, or the tiny fast red mignonette which can be sown most of the year round. Also **winter radish** — long rooted and tasting hotter the longer they're kept.

Other more unusual crops you might try at the time include **kale**, or borecole: very easy to grow with dark green curly leaves; Chinese mustard, with thick succulent stems: very fast growing and easy to germinate — it will keep producing when your silver beet has slowed down, and shouldn't go to seed till late in spring.

Corn salad or lamb's lettuce should be grown in autumn rather than spring: it's less bitter in cool weather and won't run to seed till spring. You can eat it either raw in salads or cooked but the latter is better if you don't like slightly smoky flavoured greens. Alternatively, cover the plant with a large pot or box for a week before picking to lessen the strong flavour.

In temperate and tropical areas try **swedes.** Don't confuse home grown swedes with the rank disasters available commercially. Swedes should be picked small and young — unless you want to feed them to the cow — and they lose their strong taste if grown in cold weather. Sow thickly and eat as small as possible or they'll taste like stock food.

Speeding up crops

If you need to hurry up crops there are a couple of strategies you can try. Keep them well fed and watered. Try a plant tonic made by soaking nettles, seaweed and chamomile in water for a week then spraying the strained liquid over the plants. This should give them an added fertiliser boost and increase their resistance to heat stress. A heat-absorbing dark mulch around plants will speed their growth and so will a white or reflective aluminium mulch. Dandelions grown around plants release ethylene that helps ripening — see weeds below. Couch grass is said to do the same, but the root exudations of couch grass also inhibit the growth of other plants, so what you gain on the swings with couch grass you'll more than lose on the roundabouts.

There is no hard and fast rule about when to plant the last crops for winter. You will have to judge for yourself according to when the first frost was last year, the time needed for your chosen crops to mature, and how warm the weather stays into winter. Here at Braidwood in New South Wales we have Indian summers — hot clear autumn days perfect for ripening — but autumn rain and cloudy days mean the soil cools down faster and the year's growth slows down sooner.

Weeding isn't such a high priority at the moment. Contrary to most belief, by the time your plants are a third grown new weeds won't decrease their growth much: they should be easily able to compete with them. In addition the added leaf cover of weeds with their insulating warmth may actually speed other plants maturing. This is especially true for dandelion which produces ethylene, a natural ripener. Try to grow dandelions among any marginal crop like okra or eggplant or the first tomatoes that you need to mature a little faster. Crops under apple trees are also reputed to come to maturity faster, though competition for moisture and light may inhibit this.

A background weed population can have a dramatic effect on the number and range of predators available at any one time to keep down your garden's insect pests. The weeds provide a 'home base' for a year round supply of pests and their predators, so that when pest numbers build up on a planted crop the predator numbers can rise to match them. An abundance of various weeds for example appears to reduce the number of San José scale on apple trees, aphids and cabbage white butterfly caterpillars on brussel sprouts, and beanfly on mung beans.

Weeds aren't total villains. They are simply a natural way of stabilising disturbed soil. Deep rooted weeds can bring up leached nutrients. Weeds can be excellent indicators of soil conditions. Sorrel, for example, indicates acid soil, bracken means nitrogen deficiency and thistles mean high nitrogen levels.

Weeds are mostly found in unnatural cropping systems, like your garden, with its continual turnover: weeding and replanting with bare ground around annuals. Weeds need disturbed ground. They are the first 'invaders', the opportunists who recolonise disturbed soil and start to stabilise it. The less you disturb your system with repeated digging, wide spacing between plants, and soil bare of leaf litter or mulch, the fewer weeds you'll have.

What to do with weeds

- Compost them
- Stick them in a drum, cover with water and make liquid manure and weed-free mulch
- Annual weeds that haven't seeded can be left to wilt then used as mulch.

Weeds in paving

One place where weeds are definitely a nuisance is paving. I love paving — reflecting warmth in the winter, covered with leaf shadows from the pergola in summer, cooling the house as water from drippers on the pergola above or the sprinkler on the hose evaporates from it. There are a range of ways to get rid of paving weeds without resorting to herbicides:

- water thoroughly and pull them out
- chip them out with a spade
- whip them out with a whippersnipper — this will have to be repeated but with practice is as easy as mowing the lawn
- sprinkle with borax: warning — this will kill all plant life around so only use it in paving
- paint weeds with kerosene
- make sure the material used under the paving is weed free to begin with
- plant crevices with plants you want, like thyme or chamomile. Remember, any bare ground is unstable and will be recolonised — probably by species you don't want, like weeds.

Compost

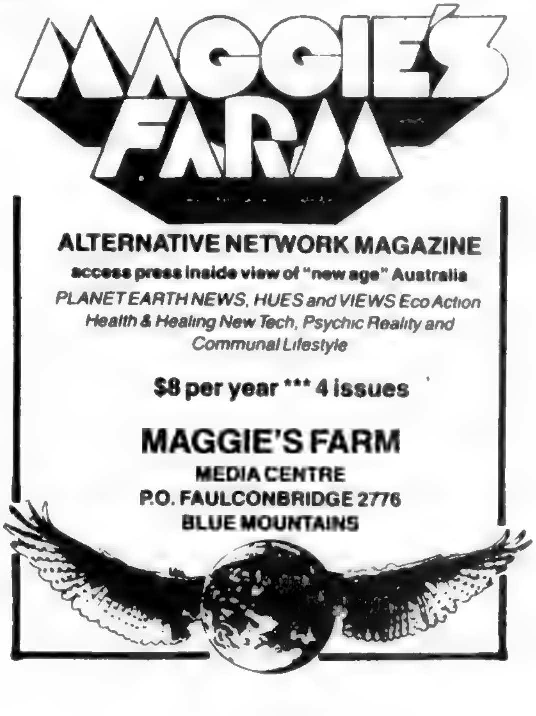
This is a good time of year to make compost, not because the compost will move quickly (hot weather means faster compost) but because you'll be pulling out spent crops in the garden for the spring meals of broad beans and peas.

There are ways to make compost decompose more quickly if you are prepared to make the effort. You can add a regular dose of liquid green manure, cover it with black plastic, and keep it in small enough piles so it will heat quickly. Summer compost is best made under broken light, like a tree — preferably an elder tree if you have one, to help decomposition. Winter and autumn compost is best made in the warmest area available.

Well made compost doesn't need commercial 'starters', and if it's not well made the starters won't be any use anyway. Home made 'starters' include soil from under an old compost heap (already rich in the microorganisms that will break down your compost), soil from under the drip line of an elder tree, yarrow or the soil underneath a yarrow plant and chamomile flowers.

I love compost, even if I am too disorganised ever to make enough of it. But if you are going to make compost make sure it works, otherwise at this time of year you may end up with a range of problems.

Badly decomposed compost, dug into the soil, can encourage a range of root rots and pathogens. Never dig any undecomposed organic material into your soil. At best it may discourage seed germination and at worst your seedlings may just keel over, rotted at the roots or just above the soil.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BLUE MOUNTAINS

Slow moving compost can also be a problem above ground. It's an excellent breeding ground for fruit fly, especially if you've put fruit or kitchen scraps in the compost. Even a supposed tight fitting gedye's bin lid will let in fruit fly, and more can penetrate when you open it. Open heaps have of course no protection at all. In fruit fly season make sure your heap is *hot* before you put in kitchen scraps, or play safe and anaerobically compost them instead: dump them in a garbage bag, seal it and leave it out in the sun for a month or so till you can't feel any distinguishing lumps in the bag and the whole thing is reasonably homogenous.

Flies breed in slow compost too, occasionally mosquitoes if the pile gets sodden and sometimes codlin moth if you've bunged windfall apples there. The safest thing to do with fallen fruit is feed it to animals — chooks, goats, horses and wombats. Either pick it up and take it to them or let them loose below the trees. Even goats under laden trees will probably behave themselves for half an hour and clean up the easily accessible sweet fruit before they get to work ringbarking, pulling down branches and climbing the tree to get to the laden branches.

If your compost **fails to heat up** at this time of year it is probably either too dry or too wet (stick your hand in and see) or lacks nitrogen. A compost heap should be warm after three days. If it's not there's something wrong.

If your compost heap was made with **low nitrogen** high carbon materials — old hay, or woody weeds — give it a dose of liquid manure, cover the manure (any sort) or weeds with water, wait till the water is a weak tea colour, strain it off and use it. Or pour over a one in ten urine solution — make sure the urine is fresh and so less ammoniacal if possible. (Too strong a urine solution — that is, fresh from the source — may sterilise some of the burgeoning life in your heap, though you may be lucky and get away with it.)

If there is still no warmth after three days keep on pouring it on every three days till decomposition starts. If it gets **too hot** (smokes or turns grey inside) turn it at once to cool it down, and keep turning every day till it cools off.

If a heap is **wet** from too much rain, cover it. If it is wet from too many sodden kitchen scraps — last night's zucchini lasagne, pumpkin soup and unfinished porridge — add some drier materials like corn stalks or old dry hay. It may well be low in nitrogen too.

Seeds

This is the time to think about last minute seed saving. Transplant any carrots or parsnips you may be saving for seed into a less used part of the garden if they are going to be in the way where they are. Transplanting them now will only make them go to seed faster. Stake them well — they'll get top heavy when the seed heads form and may fall down, causing the seed to rot or sprout prematurely.

Pests

This isn't a bad time of year for pests: the great population explosions have been and gone and predators should have built up to cope with the remnant.

If you have winter maturing fruit keep up your **fruit fly** traps and orchard hygiene. Otherwise just make sure that you don't have any old fruit in nice warm slowly decomposing compost heaps or pits — places where fruit fly can cosily spend the winter.

Check any late maturing apples, like Democrats or Grannies or Lady Williams, every few days for the sawdust-like deposits from codlin moth larvae. If you find any pick off the apples and either feed them to the animals or stick them in a plastic bag to anaerobically compost over winter.

Remove any old ladders or boxes near the trees where codlin moth can hibernate, pick up any windfalls or let the chooks do it for you.

If you're still troubled with **harlequin beetles** in the garden — sometimes called push-me-pull-yous because of their active sex lives — stick some broad pieces of cardboard on the ground around the garden. Check each afternoon for sheltering beetles. This should reduce the numbers in your garden next season considerably.

Rabbits

This is an anti rabbit device I have read about but not tried. Connect a hose to the exhaust pipe of a two-stroke lawn mower or other machine. Use a radiator hose or something as a connector so it doesn't melt. Start the engine and run it slowly so it goes roughly — not the normal purring sound. This produces mostly carbon monoxide gas and a stink of oil that makes the burrow smell unpleasant so it won't be used again for some time. Now poke the hose as far down the rabbit burrow as possible. Young nests of rabbits will be killed by the carbon monoxide; larger rabbits (and any wombats also inside) will break out the other exits. You can rely on the lingering smell to stop them reinhabiting that particular area.

Other garden jobs

The cooler weather, before the soil cools down completely, is a good time to take cuttings. I take rose cuttings any time now till the end of winter, though early cuttings take best. Try to cut off at least three buds, or more if possible, and slip them into the soil till all but one is covered. Make sure they don't dry out. Replant when they've shown new growth for at least six months.

Try budding fruit trees — apples, pears and citrus. Take cuttings from gooseberries, fuchsias and carnations now, and tip cuttings of native plants. Stick them in a pot of 75 percent sand and 25 percent compost or peat moss.

Making a hay box for cuttings

A little bottom heat will help native plants take so try a modified hay box. Take an old fruit box, line it with alfoil, fill it with loose hay, then more alfoil, then potting mix, and plant your cuttings, seeds or seedlings in there.

Every morning and evening heat up a couple of bricks in the oven, wrap then in sacking, and place them in the bottom of the box.

Using immature vegetables

Don't automatically compost crops that haven't come to maturity by the end of the growing season. Many are still useful.

Immature **corn** cobs can be kept on the stalk by bending it over them, to shelter them from frost and rain so they won't rot before they mature. They will continue to mature slowly this way till the stalks are almost brittle. Young corn, Chinese style, is delicious. Whenever you pull out a corn stalk run your fingers down the leaves to make sure an immature cob isn't forming. If it is pluck, stir fry and enjoy.

Tiny **cucumbers** — as small as they come — are delicious, even better than the big ones, either raw or cooked. Try frying thin slices with a little ginger and garlic for 10 seconds on as high a heat as you can get.

Pumpkins can be eaten as soon as they form behind the flower — just like small squash, which is what they are. They won't taste as sweet as pumpkin — more mellow and nutty.

Try pickling small **watermelons** before they turn pink inside. Use a sweet, well spiced marinade. Not that the melon will taste of much; all you'll taste will be the pickling solution, but the texture can be excellent when prepared this way.

Carrots, beetroot, parsnips, turnips and the like can be picked and eaten as soon as you can be bothered with them. The smaller the sweeter. But all of these should continue to mature through winter (as long as the ground doesn't freeze) especially under a thick bed of mulch.

Summer **lettuce** that hasn't hearted can be made into soup. Sauté it in butter with plenty of chopped white onion or a chopped spring onion, purée, then add water or chicken stock and a touch of cream. The soup should be just palely green.

Pickle green **tomatoes**, make green tomato chutney or jam- or leave them spread out in a warm place, say on newspaper on a table- to gradually ripen indoors. This way we've had tomatoes still ripening in August. Go through them frequently to pick out bad ones.

Alternatively pull out the bush, roots, dirt and all, before the first frost, and hang it up in a shed or on the verandah. The tomatoes will continue to ripen on the vine. This technique can be used for any nearly ripe fruit — zucchini, capsicum, melons, (but these may crash to the ground as the stems get brittle as they ripen) eggplant and beans.

Tiny Tim or Cherry tomatoes seems to be the most frost hardy. Try growing a bush in the middle of your broad bean patch, where the beans will shelter them. Even here we've had cherry tomatoes through winter — not many, because they ripen slowly — but enough for a couple with lunch each day.

Summer is the time for bunging in anything and watching it grow. This is a time for planning but it is worth it to be eating fresh food next spring.

Have you enjoyed John Wolfe's series of articles in Earth Garden 'Battling in the Bush'?

Earth Garden readers have responded enthusiastically to the writings of John Wolfe. In the best traditions of self-reliance, John has recently published his own book, 'Hello Big Brother'. If you'd like to enjoy more writings from this son of the Australian bush, you can buy 'Hello Big Brother' direct from the author for $12.00 post free.

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Towards food self-sufficiency

On one acre or less. Part V. Growing grain.

There must be a new revolution, taking over from the industrial revolution, and inculcating new values, appreciative of the delicate balance of life on Earth, demanding from the soil, the rocks and the sea, only those products which, through the sun's radiation are continuously renewed. Only in that way, moving towards the future with open eyes and thinking minds, can the survival of the human race be assured.

Sir Mark Oliphant, taken from ACF newsletter vol 9, no 9, Nov '77.

by Arthur Brotheridge

Devonport, Tasmania.

MOST people will be constrained by time, space, or perhaps enthusiasm, to the growing of vegetables and fruit, and to become fully self-sufficient in these is a worthwhile objective. I would try to dissuade people from trying to grow grains before they have reached this stage.

However, there may be other readers who need or wish to grow more for themselves, and the obvious thing is seeds and grains which can be dried, preferably naturally, and stored for use throughout the year. For people who wish to try growing grains, I suggest they make trial plots of no more than 3 m x 3 m. You will be surprised how much work is involved. It is easy to grow grains. The real work starts the day the crop is ready to harvest. This amount will have to be cut, threshed and cleaned by hand, and if the cost in time is balanced against the value of the grain finally harvested, it will be clear that the time could be more profitably used elsewhere.

Small, cheap, effective machinery is not available for harvesting and cleaning the small quantities of grain that I am considering in this self sufficiency exercise and yet such aids are essential to make it worthwhile.

Having expressed those words of caution I will say that for the past ten years I have experimented with some grains and for the past three or four years grown in excess of 100 kg of various grains and seeds. If generous quantities of vegetables and fruit are regularly grown and eaten, this is sufficient for bread and cakes for two people for a year.

A woman wrote in our local paper several years ago that more people should make their own bread — our venture into grains was our answer to her plea.

Flour

My wife Jean started with wholemeal flour from the local health food shops (there were only a very few loaves which ended up months later as small hard rocks in the chook pen before she got the hang of it). Then came the realisation that flour loses much of its food value even in the first 24 hours after being ground, so the next step was a bag of wheat from the local flour mill and a hand grinder, followed some time later by a Retsel electric grinder. This allows Jean the freedom to grind grain for immediate use for bread or cake making whenever she wishes to do so.

Sometime during this period came information on the complementing of foods, explained in a magazine article by Dr Con Rhee. Most foods apparently have amino acids in varying quantities and if one of these is low then it lowers the effectiveness of the others to the level of that lower one. Most of the common grains are low in lysine, and the answer is to add a food high in this. The usual way with bread making is to add soya flour. As Dr

Arthur's first crop of amaranth with seed from Rodale's in the USA. None of the plants fell over; note the height of the plants compared to the shovel in the right-centre foreground.

Rhee was unable to grow soya beans successfully in Southern Tasmania, he grew and used haricot bean flour instead. I shall mention later what I think is a more suitable seed.

Growing wheat

The next logical step was to try to grow my own wheat. Three varieties from our State research station were affected by rust in varying degrees. A red wheat from Queensland (obtained from the local health food shop) produced good grain on a slender stem which fell over easily.

Then two years ago a Field Day by our State Agriculture Department demonstrated the varieties of high yield wheat from England and New Zealand as an alternative crop for farmers to the low-income crops grown. In Europe (probably with the assistance of large quantities of chemical fertiliser) these varieties produce 5-6 times more than the Australian average. I was able to obtain a small quantity of Asprey and Hartog which yielded at the rate of about 650 g.

An interesting fact to emerge from the Field Day was that the high yield grains do best where climate provides a long cool growing period after sowing in June, which is the case here in Tasmania. A New South Wales grain grower saw my grain after harvest last year and considered that it was a hard wheat equal to the best of NSW grain.

Some years ago I grew triticale, which is a cross between rye and wheat, and it produced a very heavy crop of over 900 g. I thought that we would be able to use it instead of wheat but even when added to wheat at 1:2 it produced a sweet, sticky doughy loaf, so it did not get used. Other people have found it suitable for making a rye loaf.

Other grains I have grown successfully are barley, oats and rye, but I have not made the best use of them in the home, so have not persevered, although I am keeping some seed for future use. I have also grown good crops of millet, which is mixed in with the bread wheat.

Buckwheat is another most nutritious seed which is easy to grow. It has a short growing season, and a long planting period. I have seen self sown plants by September and have also planted in February and harvested a crop. It is of indeterminate growth, so that ripe seeds can be falling from the bottom of the plant while it is still flowering at the top. Harvest at what appears to be maximum crop ripeness. Take care when pulling plants as they come away very easily with a small ball of root and soil, and if this gets in with the seed it is almost impossible to separate as neither sieves nor the cleaner are effective. Put it in a sack and beat with a stick to thresh. Cut the plants off and allow them to dry first.

Recommended crop

The crop that I recommend as being the most valuable and worthwhile to grow is amaranth. This is high in lysine and methcopine and so the most effective seed to complement the grains in bread and cake making. Jean now uses wheat, amaranth and millet in the proportions 6:2:2.

It is an 'old' seed rediscovered, and now accepted as being one of the most nutritious seeds grown. Rodales in America are undoubtedly the biggest name in the self-sufficiency movement, and some 15 years ago decided that there was a need for a seed, apart from the grains, that people could grow for themselves. Among the hundreds of plants they investigated, one family stood out — amaranth. Then began a worldwide search for varieties. It was only to be found in small quantities, in often remote parts of Mexico, India, Nepal, Central and South America and the Philippines. Up to 1200 different varieties were collected and grown at their research farm in USA. Their collection of plants (up to three metres tall) were mostly poor producing, unevenly ripening and easily broken varieties, but they have now bred some that show more desirable qualities. About four years ago, through the editor of our locally produced magazine, I obtained four of Rodales' best varieties and have since grown from these.

Arthur has found about one week of drying in the sun is sufficient for amaranth in his northern Tasmanian climate. He dries the plants on top of glass cloches.

Many universities and institutions in the USA are now growing this crop — in almost all cases with seed supplied from Rodales — and much is being written about it. Published figures of production indicate that one tonne per hectare is a good return. It is easier to get better returns on a smaller plot, but I don't think this alone accounts for the fact that my yields over four years have averaged five times this amount. I find that 500 g is attainable and makes it a most attractive proposition for my purposes. Harvesting may have something to do with it. In the USA it is, of course cut and harvested by machines, and usually left until the first killing frost to dry out the fleshy stems before harvest.

My crop, after planting in October, appears mature in March, and I cut plants as they look sufficiently ripe, and lay them on the frame of lengths of 2 or 3 x 1 across apple or orange boxes. A week in the sun, turning once and they are dry and crisp. Seed falls out easily, but with careful handling into a large plastic lined garden trailer, I do not consider the loss of seed justifies the extra work of laying down plastic to catch the seed that falls.

Beans

Haricot, barlotti, scarlet runner beans and chick peas we grow in small quantities for soups and stews. They dry satisfactorily on the vine after planting in early October and are probably the best return in food value for area planted of all the dried seeds. Soya beans are a lightweight crop, Fiskby V, the only variety worth growing here and compare unfavourably with the above beans and amaranth. Sweet lupins and sunflowers are successful but the difficulty lies in using or hulling. Linseed is easy to grow and we grind small quantities frequently in a coffee grinder to use on muesli.

The present very dry years we are experiencing provide the ideal climate where grains, beans and seeds dry on the plant, and can be harvested on a warm sunny day and stored at once. There would be much more work if we had to harvest in wet conditions and dry on racks or under cover as seems to be the case with the rice crops in Asia.

If crops need further drying after harvesting, it is most desirable that this be in a vermin-proof place, and all stored seeds should be in vermin-proof containers. This refers to mice mainly — and perhaps birds. If loose grains are left around mice will eventually find them.

I have never seen weevils in grain even after several years storage, although grubs can appear in amaranth after a few months, and the seed should be passed through an ordinary kitchen sieve. Ideally grains should be used within 12 months although they will keep for several years, but the maximum useful life of amaranth appears to be 12 months.

The next issue of Earth Garden will feature details of Arthur's home-built thresher and winnower.

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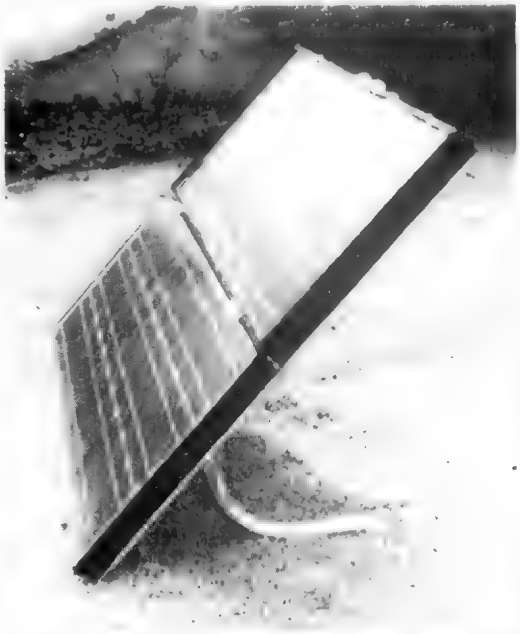

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Alternative pasture

by Robin Jean

Braidwood, New South Wales.

TODAY we hear a lot about pasture establishment using minimal tillage techniques. There are considerable time savings in time spent preparing the soil with these methods. There is also minimal disturbance to the soil so that erosion decreases and soil fauna and structure are not disturbed. For these reasons it's a great idea.

There is however, one major drawback. Minimal tillage techniques involve knocking down the existing herbage with a herbicide spray. Though many herbicides these days have a very short active life, breaking down into what are thought to be harmless chemicals on contact with sunlight, there is a recorded history of health problems associated with herbicides. Many of them have been declared safe to use at some time and later this has turned out not to be the case. Many of us are reluctant to use these chemicals, and hence minimal tillage.

We *are* concerned with the disturbance of soil fauna and existing useful grasses (such as drought-resistant native grasses) and the problem of soil erosion which can come from traditional seed bed preparation. Not to mention the time, expertise and machinery required for its preparation.

Some years ago we decided to try to establish pasture using rough minimal tillage. We bought small amounts of cocksfoot, fescue and white clover (recommended grasses for our area), mixed them together and manually broadcast the seed into the existing native pasture.

We did this when it was raining to minimise the losses to birds and ants, the idea being that the seeds would not lie around but swell and germinate immediately. We eagerly awaited results. Sure enough within ten days the seed had germinated and wherever we looked there were seedlings. This was very encouraging. The seedlings continued to look good for another ten days or so then they went yellow, shrivelled and died. However, we didn't give up totally. Over the next few years we tried a few more times — unfortunately with the same result.

Because of this experience, we began to believe that the land had been worked out with over-grazing and mining. We decided that we would not try to improve the viability (or create viability in our case) of the place.

Though we could produce all the meat we needed from the land it was from an area of around 40 hectares and this wasn't really very satisfying.

All this time we were growing vegetables and fruit

'Before'.

and at the end of that time (maybe two years) we realised that the land was not too bad. We were picking more fruit than we could handle from our three-years-in-the-ground fruit trees and giving vegetables away. Also the grass we had sown on the exposed bedrock around the house was doing well.

So we began to look again at the pasture. It was still not looking too good. In fact it was looking pretty terrible. We had eight sheep and three cattle on it and they'd eaten it down to virtually nothing. With the dry times we'd had since the so-called end of the 1981-1985 drought even the native kangaroo grass (*Themeda australis*) was looking sick.

At about this stage we also decided that we'd really like a couple of milking cows. There was no way we could run house cows on rocks and tussock.

So, we could try either of the two accepted methods of pasture establishment. In say, 12 months if they were successful, we could buy our cows. Or we could try something different.

We had another look at our vegetable jungle which had never been dug and which had artificial fertilisers added. We decided to apply to the paddock the same technique we had used for the garden: bringing in vegetable matter and using our hens to scratch through it, decomposing and fertilising it for us.

We also roughly checked the acidity of the soil. With all the other things that we thought were wrong with the soil (compaction, lack of nutrients, lack of vegetable matter) we thought that the soil would probably be acid too — we were wrong. Our soil has a pH of about 5.5 — 6 and that is fine for most grasses, vegetables, fruit trees and so on. An agronomist neighbour confirmed this for us.

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So we came up with a technique which some eight months after we began, and throughout a very dry winter, is progressing very well indeed.

Our problems were fourfold and are probably no different to the problems most farmers face. First there was a lack of nutrient, particularly nitrogen. We were not interested in adding superphosphate and sulphate of ammonia to the soil. Apart from long term soil degradation, they have a bad reputation with acidifying soil and the exacerbating insect-induced dieback. Also they are expensive.

Second, the soil had been compacted from mining and grazing activities in the past. Also there was a lack of vegetable matter, which is essential for greater retention of soil moisture, prevention of soil erosion, and prevention of acidification. Fourth, there was competition from existing plants.

To achieve our pasture we invested in two cows, some hens, and some hay and oats. Each day we feed hay mainly and grain to the cows. Each day they scatter the hay a little and convert most of it into energy for themselves and valuable nitrogenous fertiliser. The chooks also scatter the hay. And they scratch around, cultivating the soil a little, relieving the compaction and reducing the competition. In addition, they 'do over' the cow manure for any grains of oats which may have passed through. The result? A paddock spread with a layer of straw and cow and chook manure.

When we deemed the film of vegetable matter and manure to be enough we moved the stock out and waited for the first shower of rain. Then we donned wet weather gear and paddled out to broadcast a mixture of seed. As expected, the seeds germinated satisfactorily and the seeds in the hay (hopefully no weeds) also germinated. The important thing to find out was how did the seedlings grow? Did they go yellow and shrivel after a few weeks like our previous attempts?

Much to our delight they just kept growing and growing though, as might be expected, growth slowed a little at the beginning of winter. We tried a further experiment and added a few twiggy branches to some of our emergent pasture. This too made an enormous difference. With the added warmth and moisture from the branches, the grass took off as if it had never heard of winter on the Southern Tablelands.

The result of our little experiment is pasture we never thought we'd have. And it's pasture gained by methods which have used very little time or money. No expertise was needed: the fences needed to be maintained, you must dodge exuberant and friendly cows while trundling a wheelbarrow load of two or three bales of hay down the paddock, and you must remember to lock up the chooks at night so that foxes and cats don't deplete their numbers. We

After.

have stopped existing soil erosion and there is a sheen of green appearing. Because of these encouraging results, we are keen to continue our improvements. We plan to have half the land as trees and shrubs as shelter for stock and as a harbour for the wildlife. When foraging for feed, the wildlife aid the pasture by aeration and eradicating pests in the soil.

The upshot is that pasture establishment seems possible with the combination of large stock, poultry and feed imported onto the farm. It is a method with no soil disturbance, no expensive or harmful pesticides, no worries about acidification and last but not least no soil loss by wind or water.

A generator that works

by Bill Donaldson

Fiscar Pty Ltd, Ferntree Gully, Victoria.

WE BELIEVE we have developed a generator which solves *all* the problems of using wind power. These used to be problems like needing fairly high winds to obtain a reasonable current, the fatigue in the windmills themselves, and the reliability of the generators. There is nothing like our invention anywhere else in the world to the best of our knowledge.

Generator's characteristics

The efficiency of the Fiscar 120 1 kW generator is rated at 95 percent, a figure that should interest engineers and physicists (independent testing is currently being arranged). The generator allows people to harness very low wind speeds which would not normally produce enough power to produce electricity. Output is achieved in winds as low as 6 kmh. The generator starts to produce useful electric current at about 30 rpm. This figure in itself is quite remarkable.

These generators have the potential to allow people to be self-sufficient in electricity needs. The generators do not need any maintenance, such as having to be greased, oiled, or stripped down for routine repairs and so forth. They are about as big as a medium-sized television and weigh about 85 kilograms.

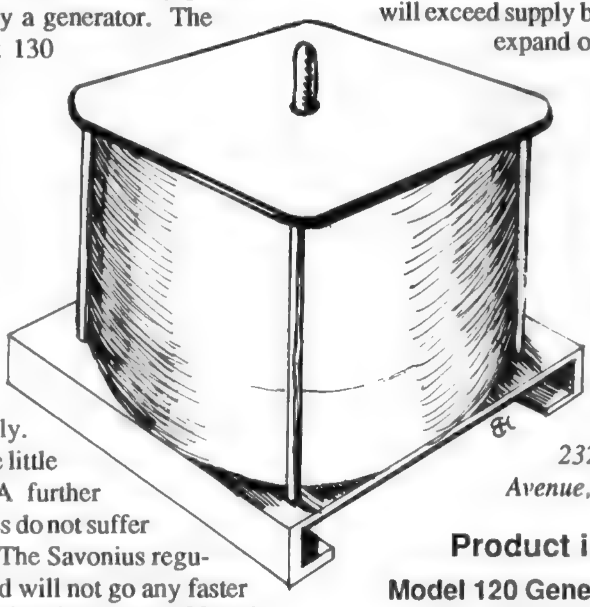
The generator is also highly appropriate for hydro power. When driven by suitable current (stream, river or tide) our system could power up to five houses for their energy needs except heating and cooking. Of course, a single user would have plenty of energy when using water— the water flow required is very low. A stream or river flowing at a mere 8 kmh would be sufficient to achieve electrical output from the generator.

You could even use a diesel or petrol engine to drive this generator and achieve remarkable fuel savings. We believe that diesel users will be very interested in using our generator for its efficiency and reliability.

Savonius windmill

The type of windmill which we recommend for use with the generator is one which cannot normally provide enough energy to drive efficiently a generator. The windmill provides full output at 130 rpm. This is contrary to conventional efforts to build enormous blade type windmills which turn at 300 rpm and which are geared up to 1800 rpm in order to drive a conventional generator. The unique aspect of our invention is that it operates successfully at such low speeds.

The windmill is the Savonius type which employs bucket scoops mounted vertically. These are relatively cheap, require little attention and are also silent. A further advantage is that Savonius turbines do not suffer from fatigue due to high speeds. The Savonius regulates its own speed to 130 rpm and will not go any faster than this — it is designed to work in winds up to 180 kmh.



Price

We sell the generators by themselves for $5800, and the windmills are $3750. The other equipment needed includes batteries for storage and inverter(s) to convert 12 volts to 240 volts main current. The total system sells for under $15,000; this compares favourably with conventional systems while delivering better results on a reliable basis.

We estimate that the cost of producing electricity from our wind driven generator is about three cents per kilowatt over a 25 year expected lifetime. We believe that the generator will last from 25 to 50 years. A complete system (generator, Savonius windmill, batteries to hold about 5 Kva storage, cables, concrete, inverters) would cost under $15,000. This is cheaper than conventional generator systems of a comparable capacity. The maintenance cost savings alone make our generator an attractive proposition. Some people may already have their own batteries and windmills. We are quite happy to supply parts as required in such cases. The figure of $15,000 is for a complete system.

Development background

Fiscar is a small privately-owned company which was formed three years ago to conduct research and development. The technology has now been perfected and patented. It is still an Australian-owned company and we intend to keep this technology under Australian control: the benefits to the country should be considerable. We believe that too many good ideas have been lost to overseas interests.

The original prototype was literally made in a backyard shed with a few tools but with much physical effort. We have now reached the production stage and hope to continue expanding capacity gradually. There has been a great deal of interest from many companies and individuals within Australia and overseas. We estimate that demand will exceed supply by June 1988, at which point we will expand our production capacity.

We have conducted extensive tests at the factory and welcome enquiries. We have a full demonstration unit set up and we have been running a generator for nearly five months now. We have completed units ready for sale to general public right now, and interested people in Victoria are invited to inspect them on our premises.

Fiscar can be reached on (03) 758 2324. The address is 2 Oaklands Avenue, Ferntree Gully, Victoria, 3156.

Product information

Model 120 Generator

This model produces 1 kW/12 volts output at 130 rpm. We offer a 12 month warranty on parts and labour when the generator is installed and used correctly. Speeds in excess of 150 rpm will break the warranty. The cost is $5,800, ex factory and the buyer is responsible for transport costs. The generator weighs 85 kilos approximately and transport can be arranged for under $100 to most places in Australia.

The Fiscar Model 120 Generator is entirely designed and produced in Australia using the best possible quality components and materials. Because it operates at low speeds and uses good quality components its expected life is 25 years. It contains no gears or pulleys so it needs no regular servicing or maintenance. It does not need oil, grease or lubrication, unlike most conventional generators; it is a completely sealed unit. Normal generators have a life expectancy of around seven years with a major overhaul at four years.*

We estimate that the cost of electicity produced by our system will be three cents per kilowatt hour over the 25 years. This compares very favourably with the costs of diesel for example (30 to 150 cents).

Savonius windmill

The Savonius windmill is ideally suited to the Fiscar Model 120 generator because it regulates its maximum speed to 120 to 130 rpm. This is the maximum recommended speed for the generator. (Going faster does not produce more electricity: you will merely burn out the generator.) The Model 120 generator sits directly under the Savonius. There is no need for a gearbox.

If you want to use a different type of windmill this is possible provided you use a gearbox to reduce the speed to 120 rpm. You must also ensure that a non-Savonius windmill does not exceed 130 rpm. The Savonius does not suffer from problems such as fatigue or yawning which cause windmills to break down frequently. The Savonius will operate at wind speed up to 180 kmh. It also captures winds efficiently at very low speeds. Even at maximum speed the Savonius is completely silent.

Until the arrival of the Fiscar Model 120 generator it was not efficient to use the Savonius windmill to generate electricity. The combination of these devices offers cheap, clean, safe and reliable electricity at last. The Savonius has four buckets and is 10.7 metres high by 2 metres square.

The cost of the windmill is $3,758 direct from the factory. Transport is the responsibility of the buyer. The windmill's weight is approximately 1.5 tonnes. It can be easily assembled and comes in kit form complete with instructions. It is mounted on hinges and can be pulled upright using simple methods. It is virtually maintenance free, and only requires a check of bearings for possible greasing every three months.

1 kW generator

We decided to produce a 1 kW generator after calculating the average wind speeds and comparing the expected output of electricity with the average consumption for a remote household. This had to be provided at a price no dearer than existing conventional generator systems.

We designed the Model 120 to produce 1 kW/h at wind speeds of 60 kmh. This is not likely to occur very often. The generator starts to produce electricity for storage in batteries at a mere 10 kmh wind speed. The average wind speeds in Australia are a mere 9 kmh. We predict that 5 kW/day will be achieved in most areas and there are many areas where considerably more will be obtained. If you have 10 kmh winds for 10 hours per day then you will obtain the predicted 5 k/day easily.

What can be done with 5 kW per day? 5 kW is sufficient to run the following appliances for the times indicated (figures are a guide only):

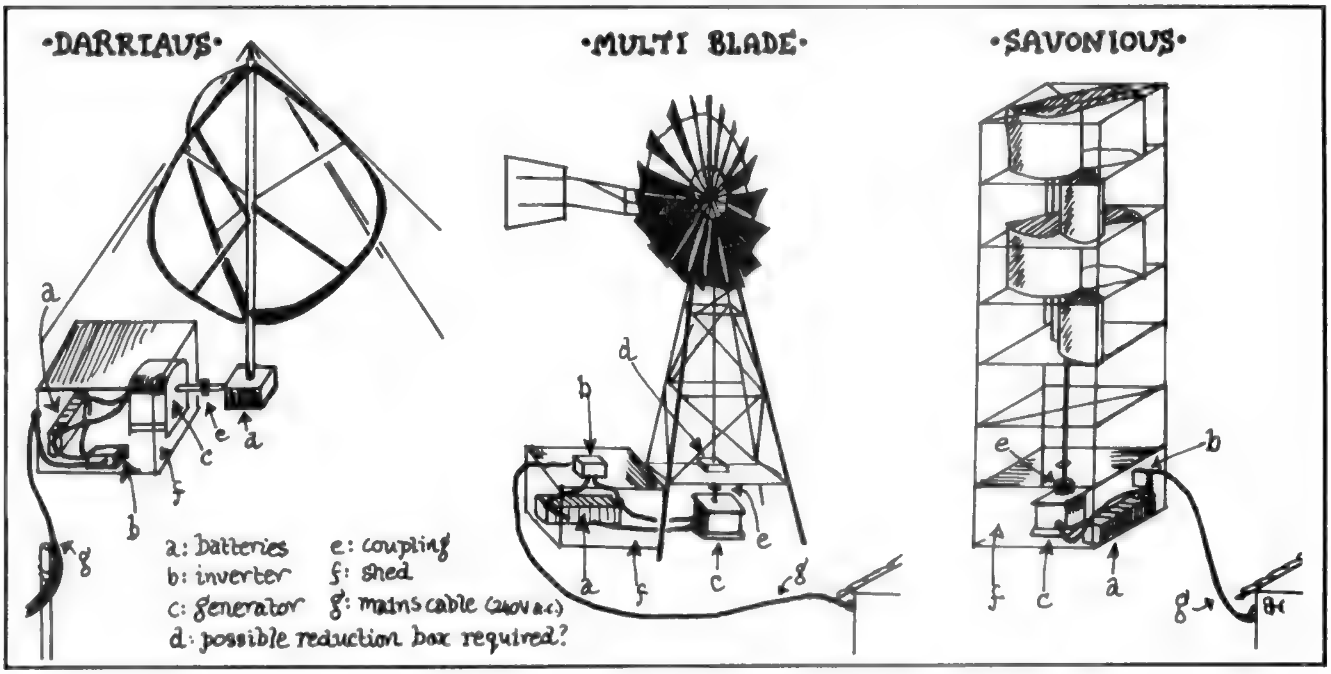
- a refrigerator for 24 hours
- three lights, each 68 watts for six hours each
- a television for six hours
- a washing machine, one load every second day
- a stereo system for one to four hours each day
- a computer for one to three hours each day.

Times may vary due to different appliance consumptions.

The Model 120 is an incredibly efficient generator. You could drive it with a diesel or petrol engine and you would achieve much more efficiency than using a normal generator. To obtain 1 kW from the Model 120 you need only run a 1.25 hp motor.

The model 120 requires only 120-130 rpm to produce 1 kW/h. A normal engine will run at about 3000 rpm. This sort of speed is required to produce electricity in a conventional generator. As the Model 120 needs only 120 rpm you could gear the speed down from 3000 to 120-130 rpm. This would give very large torque on the low speed and will give enough power to drive the Model 120 to full output.

**Source: Report of the Working Party of Electricity Supply to Remote Areas. 1984, of the Australian Minerals and Energy Council.*



Small business ideas

Part I.

by Sophie Masson

Guyra, New South Wales.

THIS is the first in what I hope will be a series of articles to give readers ideas for small business enterprises. I intend to give general as well as specific information, and I'd like to start off with a basic, yet often very successful idea.

Most of us have heard of lords and ladies in Britain making their inheritance work for them by opening their castles and mansions to the public. Well, you can do the same! Many farmers, in this time of rural crisis, are looking for alternative means of income, and farm holidays may just hit the spot.

Even if you've only got a small place, you can think of starting a farm holiday enterprise, especially if you're near an interesting area (with beautiful or unusual landscapes, opportunities for bushwalking or wildlife viewing). A farm holiday can be as simple as someone's tent or caravan in your paddock, perhaps with you providing fresh farm eggs and milk . . . Many urban families welcome the opportunity to enjoy country peace and quiet with the chance to get together with 'country cousins'. The current gulf of misunderstanding between city and country could be bridged this way. If you want to go into the farm holiday enterprise in a bigger way, you could build simple cabins for your guests, and organise activities, such as fishing, horse-riding (but watch out for insurance) or farm activities such as milking, shearing and harvesting. It's amazing how city guests, particularly children, will enjoy doing things you may consider a chore!

Insurance has often been a problem for farm holiday providers, because premiums are getting higher and higher as people get more and more litigious. But this may be solved in the near future, because an umbrella organisation called Australian Home Accommodation*, in Melbourne, aims to buy insurance in bulk for all businesses registered with them. AHA is worth joining — they put your farm on a computerised bank and in their information booklet, which is available to many overseas and domestic visitors. When you first register with them, they send someone out to look at your place, and then award it one, two or three 'kangaroos' — their answer to the star hotel system. One kangaroo is for simple, basic, but clean and comfortable accommodation, while three kangaroos is for 'extremely comfortable accommodation'.

I spoke to two women who run farm holidays from their family farms. One, Di Crossing of Wallabadah in northern NSW, has been running her farm enterprise for many years, while Di Brennan of Warren, in western NSW, has been running hers for about a year. Di Crossing's farm comprises both a cattle operation and the farm holiday business. She says guests are interested in working farms — they're not into 'dude ranches', where everything is make believe. She has guests from the USA, Japan, Europe as well as Australia, and says international and domestic visitors are looking for two different things.

"The international visitors are interested in meeting the people and the animals; the Australian visitors are into the peace and quiet, the respite from city life," she said.

This dual purpose can certainly be satisfied on the Crossings' farm. There's all sorts of activities for visitors, or they can simply relax and enjoy country hospitality. Meals can be provided if necessary, and there's also all sorts of information available for guests about the surrounding district and its attractions.

Di Brennan's enterprise at the family farm near Warren, in NSW's wheat belt, has already attracted a number of visitors, and she's keeping her business deliberately low-key. The Brennans' renovated the old shearers' quarters on the farm into visitor accommodation, and do not arrange too many activities, aside from farm pursuits such as watching the harvesting of cotton and wheat, shearing, and other features of the farm year which she says guests find fascinating.

"People are sick of slick beach holidays," she said. "They don't know the inland well, and it's a revelation to

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them". The Brennans' farm is near some magnificent natural attractions, such as the Warrumbungles, and the Macquarie Marshes, and guests never have too little to do. These people are providing traditional farm holidays, but there are all sorts of ideas which could be built into the general framework. A very ambitious, but exciting one could be the 'colonial farm', especially suitable for small farms with period or earth or mudbrick homes. Old methods of farming could be demonstrated, in a sort of working farm museum like the one I reported on, Acton Scott in England (Earth Garden 54).

There are other ideas — a pick-your-own-farm holiday, when the back breaking work of picking fruit or vegetables could be delegated to visitors delighted to have real contact with their food; a wildlife farm holiday, ideal for wild bush blocks — the list is only as short as your imagination!

When you do decide to start such a farm enterprise, contact your local tourist office. They'll be able to keep a pamphlet on your business at their premises — a valuable source of customers. And let your local newspaper know. They'll probably be interested enough to run a story, especially if you've got a slightly unusual angle.

**Australian Home Accommodation, 209 Toorak Road, South Yarra, 3141, (03) 241 3694.*

. . . ENERGY PULSE . . . ENERGY PULSE . . .

Portable solar power

Quirk's Victory Light Company, of Rose Bay in Sydney, have recently begun marketing SOLAR-PORT, a portable 12 or 24 volt DC power source. SOLAR-PORT comprises two 44 watt solar modules housed in a suitcase. This means the unit can be stored easily when travelling, and when needed, opened out with legs in the case to form a 45° angle frame.

The device comes already wired so that you can connect the outlet plug provided, directly to your battery source. The SOLAR-PORT can be used to power items such as refrigerators and lights. Through an inverter you could even power 240 volt appliances such as stereos.

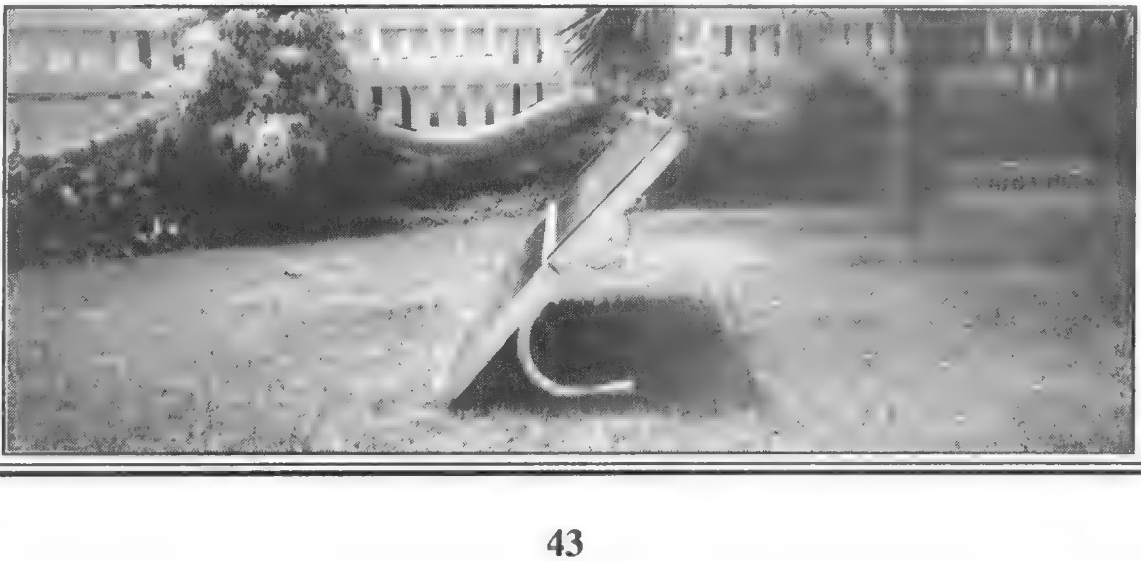
The SOLAR-PORT means many people won't have to worry about the security risk of leaving valuable equipment unattended — you simply pack it up and lock it away or take it wherever you're going.

A typical system for a traveller or someone with a weekend retreat would be to have an auxiliary battery, as large as possible (100-150 amps), which would be charged by the vehicle's alternator while travelling. The SOLAR-PORT would then connect to the auxiliary battery and from the battery to any appliances.

The power specifications are as follows:

	12V (2 modules)	24V (2 modules in series)
power	88 wattS	44 watts
Contact (typical load)	6.06 amps	3.03 amps

The SOLAR-PORT is 1083 mm long by 330 mm wide by 72 mm deep, and weighs 13 kg. The introductory price is $995.00, and for more details on contacting Quirk's, see page 36.



Rosemary for remembrance

by Liz Sinnamon

Kenilworth, Queensland.

ROSEMARY is a beautiful aromatic herb which only needs to be brushed by the hand to release its fragrance — it is probably the most popular of all herbs. It originates in the countries of the Mediterranean region, and there are two main varieties: upright and prostrate. The leaves of upright rosemary grow to over 25 mm (1 inch) long, while those of the low growing or prostrate rosemary are smaller and narrower. Some varieties have very dark green shiny leaves, others have duller, paler foliage, and have a lower resistance to fungus disease.

Upright rosemary can be used to make a small useful hedge, while the prostrate variety is grown more for ornamental purposes as a ground cover. Both have the same kind of delicate blue flowers and long narrow leaves which are silver striped underneath.

Rosemary is easy to propagate from 6 inch tip cuttings, or by layering. Simply place several cuttings into a 6 inch pot (dip the base of the cutting into rooting powder for best results), water well, and cover with a plastic bag until the new roots have formed. Re-pot each tiny plant into 3 inch pots and allow a strong root system to develop before planting out into the garden.

Layering is done by pinning down a stem from the parent plant to the soil using a piece of U-shaped wire and then covering the stem with a little soil. When the layered branch has developed a good root system, cut it away from the parent bush and plant out in a sunny position. Rosemary prefers an open sunny spot in the garden, with average well-drained soil and will not tolerate wet roots.

Culinary

This herb helps the digestion of rich and starchy food. It gives a delicious savoury tang to most meats, and goes well with eggplant, zucchini, lima beans, brussel sprouts and cabbage. It is excellent in herb bread and added to plain scone dough makes a delightful change. The flowers can be candied.

Medicinal

Since early times, it was believed that rosemary stimulated the memory. This is the origin of the saying 'rosemary for remembrance'. Herbalists today recommend rosemary tea to strengthen the memory and to relieve headaches. A rosemary wine is produced by soaking a handful of leaves in one litre of white wine for 24 hours — a calming cordial for the nerves and stimulating for the kidneys.

Rosmarinus officinalis — 'dew of the sea'.

Cosmetic

Extract of rosemary in shampoos and hair rinses revitalises the scalp, prevents dandruff and encourages new and healthy hair growth. Add a few fresh sprays to the morning bath for a delightful fragrance to the skin. Dried leaves and flowers are a lovely addition to pot-pourri, and will help repel moths in drawers and cupboards.

Companion planting

Rosemary repels carrot fly, and like other aromatic herbs is a good influence in the garden, attracting honey bees when in flower.

Marangaroo: four legs good

by Marja Fitzgerald

Mongogarie, New South Wales.

MARANGAROO is occupied by two Jersey cows, a bull calf, two donkeys, a sometimes cat (sometimes night tiger, sometimes sand lie-on), a large rooster with hiccups, five hens and six chicks. These animals have the happy privilege of owning two trained humans. There are also other animals — wallabies, echidnas, snakes, lizards, possums and many birds — who have so far been unable to train the humans to feed them, but haven't yet given up hope. However, the first mentioned animals have succeeded admirably in domesticating two of the species, *Homo sapiens softicus.*

The female sap softicus religiously feeds the animals daily, taking care to pander to their gourmet palates, as well as adding healthful minerals to their diets. The male carefully checks them for ticks, gently removing and killing those he finds. Both give the donkeys a weekly pedicure (clean and trim hooves, then anoint with oil) which keeps their hooves healthy and feeling good.

As well as getting excellent service for their physical care, the co-op of animals also receive mental stimulation and entertainment from the softicus servants. The feathered shareholders enjoy following the softici everywhere, and find their every move fascinating. The cows and donkeys are more discriminating and usually only follow or watch when there's something different happening . . . things being carried are always worth watching, while softici romping is a truly fascinating sight.

The co-op believe in keeping their servants happy — they are aware of the practice of softicus-poaching by unscrupulous co-ops. So the hens and cows give them eggs and milk, the donkeys help them by carrying and pulling firewood, posts and sled, and the sometimes cat allows them to stroke her and pay her homage. She also comforts them when they are unhappy by jumping into their laps and licking them, so taking their minds off their troubles.

The co-op has encouraged the tool-using softici to build them shelters, and are at present working on a new project. The co-op members being gourmets to an animal, are not completely happy with the animal food the softici buy from the produce store. They feel that a true gourmet should only be offered organically grown food. At present some of their food is organic — the grasses, and the chooks' worms from the compost heap, as well as bits and pieces from the garden of the softici. So now the co-op is encouraging the softici to plant high protein fodder trees. Some have already been planted, and the softici are raising others in their shadehouse. Members are now looking forward to the delights of Honey Locust pods and Tree Lucerne branches, as well as Tree Lucerne seeds for the chooks.

Perhaps you would like to witness a typical co-op meeting. Tiny is a 20 year old Jersey, who hasn't come in to calf again since her last calf three years ago. The other animals love her dearly, so she is Madam Chaircow. She doesn't believe in standing on dignity, unlike the sometimes cat, so meetings are fairly informal. She looks round the meeting.

"Right — we're all here. Let's start. Tip-on the Tail!" (addressing the sometimes cat by her full name; Tip-on, as the only animal with access to the inside of the softicus dwelling, performs an important function for the co-op as information gatherer.) "Anything to report?"

Tip-on smoothed down her beautiful multi-hued fur coat with a few deft licks.

"Well, yes!" she eventually replied. "My humans," . . . the sometimes cat feels possessive and jealous of the softici, as she had been the first of the animals to enslave them. The others wangled their way on to the scene later, after the humans had acquired an appropriate place, namely Marangaroo. Tip-on was the only animal to predate her association with the softici from before Marangaroo, and this made her feel she deserved special rights and privileges.

"My humans," repeated Tip-on, looking down her furry nose from her fence post throne, "intend going Out To Dinner tomorrow night!" (dismayed gasps from the assembled animals). You'll probably miss out on your buckets!" Tip-on said smugly, being the only animal who is fed

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on the rare occasions when the softici return home after dark.

"Are they going to the big town or the little town?" (one hour or half-hour drives respectively) asked the intelligent young donkey.

"The little town. It's their twelfth anniversary!" added Tip-on importantly.

"What does that mean?" asked Flufflebum, a slightly scraggly black chook.

"Something to do with those mornings when they're awake but get up late," said Tiny.

"To do with being on heat," added Flower, the young and sometimes very randy Jersey.

"What are we going to do about our buckets?" demanded Happy the gelding, getting impatient. His stomach is his most important organ, he reckons.

"Easy!" said Matilda to Jenny, Happy's best friend. "We come up to the house early, before they leave! They were probably going to feed us anyway," she adds disdainfully — she is not as concerned about her stomach as the others.

"Any more business?" asks Tiny the chaircow. No replies.

"OK, meeting over — and remember to come up early tomorrow. Also remember to hold your bellies in — we don't want Marja putting any of us on a diet!" Here she looks pointedly at Matilda.

The meeting slowly dissolves . . . the cows and donkeys spread out eating grass, the chooks head for the compost heap, and Tip-on finds a shady corner for a snooze. Life on Marangaroo resumes its comfortable leisurely pace.

Mudgee Small Farm Field Days

access

The 1988 Mudgee Small Farm Field Days are set for another record year of attendances and demonstrations. This year the Field Days will be held on 15 and 16 July at the Mudgee Showground.

The Field Days organisers are currently expecting over 250 commercial sites to be taken up and 150 educational and practical demonstrations. The Mudgee Small Farm Field Days presents a wider range of practical demonstrations on all aspects of farming than any other Field Day in New South Wales.

Over 20,000 people are expected to attend this year's Field Days, which have the theme of 'The Family Farm'.

Included in the program will be lectures from experts from a range of Government departments, including the Department of Agriculture, the Forestry Commission, National Parks and Wildlife, and Soil Conservation.

For further information about the Field Days, write to the Manager, Box 12, Post Office, Mudgee, 2850.

Pioneer Artisan's Weekend

Saturday 23 April — Monday 25 April, at Gunningbar, Grabben Gullen Rd, via Goulburn, NSW (048) 29 2114

Artisans from the local area will demonstrate their skills and sell their wares in a country-style market place at Gunningbar, home of the Australian yurt. The weekend will include hand shearing, horse shoeing, bush cooking, steam engine power, leather tanning, spinning, weaving, mudbrick making and much more. Good old fashioned entertainment in the evenings (bring your musical instruments and yarns). Bush style food, $5 per meal, $5 entry fee at the gate, with camping sites available at $10 per night (toilet facilities, hot water, barbecues and cooking utensils available).

Permaculture Design Course

Practical design for homes, gardens and farms.

26 September - 9 October, 1988.

The teacher will be Lea Harrison, and the guest teacher will be Bill Mollison. The course is an intensive, 12 day, on farm, residential course, in North Eastern NSW. It will include lectures, slides, videos, and practice in designing. No previous experience is necessary and the course will be limited to 20 people. The cost is $380, which covers tuition, food and accommodation.

For more information, contact Lea Harrison, Stoddarts Road,Tyalgum 2484; phone (066) 793242.

Energy off the shelf, and other snippets

Chris and Rhonda have been involved with alternative energy systems since the early days of Earth Garden, and there comments here back up the thoughts of Peter Pedals elsewhere in this issue. Their other snippets of advice continue to be well-received by readers.

Chris and Rhonda Martin

Coonabarabran, New South Wales.

WITH the increase in inverter prices, our 2 Kw machine has gone from $1500 to $3000 and a rethink in sizing is required. An inverter of around 1000 w is all that is really needed to run most household appliances. Looking at the cost of battery replacement — a demand above 1000 w is not an economical proposition for use for any period of time.

About the only justification for a large inverter is for starting electric motors and even these have their limits — about 3/4 hp for a 2 Kw inverter. Any high demand electrical appliances such as a washing machine, iron, or belt sander should really be run from a generator unless you have a very large solar array. As most generators run at one third of their rated power, whether you are using it or not, a battery charger will take up much of the slack power not being used by the appliance.

For example, once an iron reaches its required heat a thermostat cuts in and no power is used. With an electric motor it may take a large amount of power to start it but when running it draws little current. Power tools are often used for less than half the time the power point is switched on. The above system is a more efficient use of fossil fuel.

Wood boxes

The first house we occupied in the country did not have a wood box that was externally accessible. This meant tramping dirt into the house or even using a wheelbarrow to transport large quantities of wood inside. This is a very messy method with chips being taken off doorways and furniture.

At 'Mullionkale' our wood box is next to the stove and about one metre above the ground. It is in our eastern wall as this side experiences the least rain and wind. Originally the box was designed to take the fuel stove hot water tank on top but the desire for solar hot water in summer dictated that the tank be placed on tall poles. The box holds between three to six days' supply, depending on use. Underneath, the area is used to store gumboots and one dog considers it her outside kennel with the gumboots spread in all directions. The wood box's only disadvantage is that it is not fully sealed and is therefore a route for mice to enter the house.

Mudbrick floors

Three of the rooms in our house have mudbrick floors. In all cases we left a gap between the bricks and brushed a soil/cement mix dry into the gaps. We then flooded the floors with water to set the mortar. The floors of the children's bedrooms were given several coats of linseed oil to seal them. The bathroom was coated with Solpah oil but this peeled off and had to be redone.

The problem seems to be that because the mortar is not compacted it does not set in a hard mass and the gaps in the bricks are gradually becoming deeper. The bathroom was redone using a wet mix but much of the lovely pattern we used has disappeared. If anyone has ideas on how to resolve the problem they would be much appreciated.*

Boring-Boring-Boring

With our bore we mentioned that we were fortunate enough to have it above our dam, gravity feeding downhill. Originally the pipe just curved out of the bore then downhill to the dam. After the pipe kinked at the borehead we decided to put a poly pipe elbow in the line to make it neater and prevent further kinking. This was a bad mistake as we now have to prime the line constantly due to a small amount of air seeping in around the fitting causing an air lock. While the poly pipe fittings are water tight they are obviously not air tight.

Perhaps the safest way would be to curve the pipe gradually and support it at 0.3 metre intervals with posts. Any joins in the line will have to be buried underground.

* *apart from the method described by Ian Factor on page 33 of EG 40.*

Growing mushrooms in Australia for profit

by John Mason

Principal, Australian Horticultural Correspondence School, Lilydale, Victoria.

THE common field mushroom, which grows wild throughout Australia is known as *Agaricus campestris*. It is the one which pops up in paddocks in south east Australia after the first rains of autumn. The commonly cultivated mushroom is *Agaricus bisporus*.

The species *Agaricus bitorquis* however, has some characteristics which make it more desirable than bisporus — longer shelf life, virus resistance and resistance to bruising. These characteristics have led to the species *bitorquis* being used in breeding programs aimed at producing crops more suited to the fresh market. The *bitorquis* species may very well become a serious competitor with the *bisporus* species in the long term.

There are a range of other edible fungi which are often referred to loosely as being mushrooms. Though these are not produced commercially in Australia, some are cultivated and are of significant economic importance in other countries. These are outlined below:

Coprinus fimetarius

Suited to freezing, canning, or drying, excellent flavour and good potential as a novelty vegetable.

Flammulina velutipes

Fruiting bodies are small, but delicious, eaten for centuries in parts of Asia, grows on wood (can be cultivated on sawdust), cultivated commercially in Taiwan.

Lentinus edodes

The most important cultivated fungi in Japan, grows in logs of *Fagaceae* trees (for example: oaks); not canned — sold fresh or dried; commonly called Shiitake.

Pleurotus

Several species of this genus are edible, and have potential for cultivation commercially.

Stropharia rugoso-annulata

Has been cultivated in Germany, cheap & easy to grow, but yields are uncertain, not suited to intensive culture.

Volvariella volvaceae

The edible straw mushroom, from tropics and sub tropics, has been eaten for centuries in Asia.

Food value of mushrooms

The mushroom is a low calorie food and hence is valuable for people with a weight problem. In addition they are rich in vitamins and minerals and have a high protein content. Mushrooms are a popular dish because of their distinctive flavour which complements so many other foods.

Mushrooms should preferably be eaten fresh. However they can be frozen or dehydrated successfully.

Recommended temperature and relative humidity for storage

Highest freezing temperature for mushrooms	30.4 degrees F
Recommended storage temperature	32 degrees F
Relative humidity for storage	90 percent
Normal storage life	3-4 days.

Commercial mushroom growing takes place in most States of Australia. The Tasmanian Department of Agriculture has produced leaflets and articles on mushroom growing from time to time, and would be a useful source for further information. The South Australian Department of Agriculture has reproduced some of this information from Tasmania, and makes it available to the public in the form of Agdex Fact Sheets. Very little has been written and is commonly available in Australia, apart from the information provided in such courses as the Mushroom Culture course provided by the Australian Horticultural Correspondence School.*

Pest and disease problems are generally minimal provided good sanitation is practised. One of the major problems is maggots from small flies. This can be largely reduced by making growing areas as flyproof as possible. Most of the more serious fungal and bacterial diseases can be minimised once again, by maintaining cleanliness in the growing area. Other pests can include millipedes and slaters, both of which favour a moist high organic content soil.

Mites and some other pests might need to be controlled occasionally. If this is done with chemicals you need to be particularly careful about the toxicity and residual nature of the chemicals used, given the fact that mushrooms are grown and harvested over relatively short periods of time. It is far better to control pests organically.

Mushroom growing

They can be grown outside during spring or autumn in temperate climates, but may be grown over longer periods indoors. They need a temperature range of 15 and 21 ° C.

Step 1 Obtain spawn (usually in sealed containers).

Spawn is produced commercially at several mush room farms throughout Australia. These are normally listed in the Yellow Pages. Spawn is produced from known productive strains under laboratory conditions thus reducing weed and disease problems.

Step 2 Prepare box or bed with soil or compost to grow the mushrooms in. Because mushrooms don't make their own food they need a rich compost based on animal manures. The pH of the compost needs to be between 7.5 and 8.5.

Step 3 Remove spawn from the bottle and break it into pieces each 1-2 cm in diameter.

Step 4 Plant each piece of spawn about 2 cm deep and 25 cm apart.

Step 5 Keep moist but not too wet. Mushrooms do not need light but do require a cool, dry, draught free place to grow. It is easier to control the growing conditions inside a shed or under the house for example. If space is limited growing trays may be stacked intiers.

Step 6 The first mushrooms should be ready to harvest in between 6 & 10 weeks from planting. After that, picking on a regular basis will encourage production of more mushrooms.

**The Australian Horticultural Correspondence School provides an excellent course which guides students through all aspects of mushroom growing and through all aspects of culture to preparation in cooking.*

For details write to: A H C S, 264 Swansea Rd, Lilydale, 3140 or phone: (03) 736 1882.

WHY NOT SUBSCRIBE DIRECTLY TO EARTH GARDEN?

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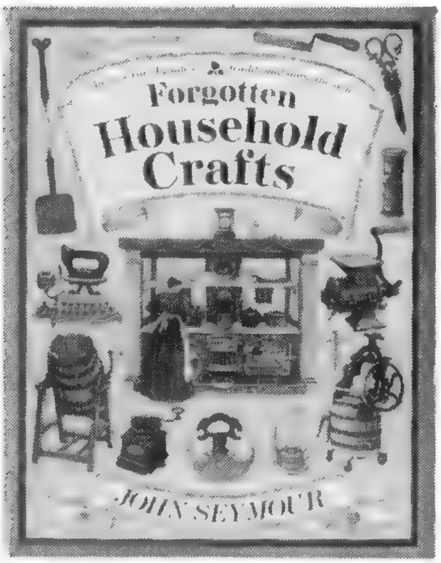
EARTH GARDEN REVIEWS

Edited by Sophie Masson

Forgotten Household Crafts by John Seymour, published by Angus and Robertson, rrp $29.95.

THIS is a very handsomely produced book with lots of illustrations, sepia photographs, and snippets of information. It is by the 'guru' of self-sufficiency, John Seymour, who has written a number of books on self-sufficiency and other assorted subjects, and has also run a school of self-sufficiency in Britain.

The book is dedicated to that 'high priestess of the hearth,' the housewife, and Seymour often waxes lyrical in praise of these women (while, one senses, carefully keeping away from doing any actual household chores himself!). It gives a good picture of how a household would have run and stocked in the days before the labour-saving device, and is a good source of information (mainly pictorial). Quite useful, for example, for researching a book set in an earlier period.



However I have many reservations about Seymour's whole tone and philosophy. This is a dilettante's wander down the corridors of housewifery, replete with pious sentiment on the importance of the role (the highest role you can aspire to, if you're a woman, of course, according to Seymour). It is full of the sort of nostalgia that made Laurie Lee's Cider with Rosie such an enthralling, yet curiously false, account.

Everything today is bad, according to Seymour — it was so much nicer for the spectator to watch a woman washing clothes by hand, beating butter, doing a thousand and one chores! The fact that such a person would have had to spend every minute of her life running her household, while her husband could relax after business (or perhaps even write a book like Seymour!) cuts no ice with him at all. There is no information on how to actually do all the myriad of things women did to make a house comfortable, it's just a tourist's trip. There is certainly a place for a book to celebrate the true civilising influence of the home, and the many tasks women had to perform, but this Cobbett-like impatience with the new (how dare the poor sit and gossip, drinking tea and buying their bread from the baker, instead of making it, was one of Cobbett's frequent litanies — a tone taken up by Seymour).

Seymour's books are very attractive, with chatty little anecdotes, but for real, nose to the grindstone Earth Gardeners, I don't think they're much use! This is, however, a lovely book to look at when you're by the fire on a rainy day — if you can ignore the patronising so-called 'worshipping' of those hearth priestesses!

The Visual I Ching, by Oliver Perottet, Published by Angus and Robertson, rrp $29.95.

THE *I Ching*, or *Book of Changes*, is a Chinese book of wisdom thousands of years old. It was devised by Chinese sages to help people understand and explain the changes in our lives and in the world around us, and what makes the universe 'tick'.

They arrived at a system which they called the *I Ching*, a part philosophy and part mystical 'oracle', which was interpreted by experts, and later by ordinary people.

The *I Ching* is based on the idea that the universe functions on two principles — masculine and feminine, or yang, and yin. According to the Chinese sages (who rather laboured under the preconceptions of their age!) yin — the feminine — is passive, dark, weak; yang (masculine) is active, strong and bright.

Yin and Yang stand for all the contrasts in the world, and although they are in opposition to each other, they also complement each other — together they make a whole unit. The *I Ching* used a system of complex lines to give 'answers' to people's questions, and many of the answers are as vague as you can make them, able to be interpreted in any way. There's nothing occult about the *I Ching*, it is simply a philosophical system which you can interpret in any way you want.

In the antiscientific days of the sixties, the *I Ching* was 'discovered' by thousands of counter-cultural enthusiasts, and soon it seemed everyone was rustling through the *Book of Changes* to find the answers to life, the universe, and everything.

This production includes an explanatory book, and a set of beautifully produced cards which show the *I Ching*'s possibilities in a visual way.

The Visual I Ching includes a number of games and exercises you can play with the cards, as well as a guided tour through the oracle, and how to ask it questions.

As Second-Century sage Wang Pi pointed out, "The ideas are expressed in pictures, the pictures are explained in words, clinging to the words we fail to understand the pictures, clinging to the pictures we fail to understand the ideas . . ."

The Homebuilt Dynamo
by Alfred T Forbes

Todd-Forbes Publishing,
PO Box 3919,
Auckland, New Zealand.
Price: Aus$85 airmailed.

THIS comprehensive and carefully-produced book, recently published by Earth Garden readers, husband and wife team Al Forbes and Julia Todd, is a landmark publication because it gives an incredibly detailed account of how to build a very sophisticated home energy system based on ceramic magnets. It is a picture diary of the step-by-step construction of a low speed generator and how it has been put to use by the authors. The book contains over 300 photographs, drawings, schematics of electrical systems and tables of test results, so it's not your usual do-it-yourself manual.

THE
HOMEBUILT
DYNAMO

DYNAMO DESIGN and CONSTRUCTION
WITH CERAMIC MAGNETS

AN ORIGINAL MODULAR DESIGN
BASED ON PRACTICAL EXPERIENCE

by Alfred T. Forbes

A Picture Diary of Step-by-Step Construction
of a Low Speed Generator and how
it has been put to use

WITH OVER 300 ILLUSTRATIONS
Photographs, Working Drawings, Schematics of Electrical Systems
and Tables of Test Results

All Photographs, Drawings
and other illustrations
by the Author

Al Forbes decided to write this book after having great trouble finding a manual on how to construct a small dynamo to generate his own power. Like many Earth Gardeners, Al and Julia bought rural land (back in 1970 in New Zealand) and the local electricty authority wanted an exhorbitant amount of money to supply power. They couldn't find the right book, and after many refinements while developing their own dynamos, they have now published the book they needed 18 years ago.

The Homebuilt Dynamo should prove to be a very valuable investment, repaying its purchase price many times over, to readers who find themselves wanting such a power system, but who don't have endless tools, equipment and specialised machinery. It is also suitable as a teaching tool for technical institutes — this innovative machine can be dismantled and rebuilt repeatedly with only a screwdriver and set of Allen keys.

The book shows how you can build a home energy system worth thousands of dollars without the need for special equipment. In fact, the design has been prepared in such a way that no soldering or welding is required. No custom castings are needed, no foundry work, and there are no brushes to wear out — possible through the use of newly available permanent ceramic magnets.

When compared with conventional metal magnets, the power of ceramic magnets is enormous — especially in their power to pull over a much greater distance and to withstand strong demagnetizing forces. The construction toler

continued on page 56

EARTH GARDEN UNCLASSIFIEDS

Unclassifieds are 24 cents per word prepaid. The deadline for Unclassifieds for the next issue is 13 May.

THE AUSTRALIAN HERB SOCIETY INC. Members receive a quarterly magazine, access to 'seed bank' and extensive tape lending library, free to members. For application form please write to: The Secretary, PO Box 110, Mapleton, Queensland 4560.

HOME STONE FLOUR MILLS. Mill your own stone-ground wholemeal flour for cakes and bread at home with a Retsel Little Ark Stone Flour Mill. "Endorsed by the Housewives' Association". Write for catalogues to: Retsel Distributors, PO Box 712, Dandenong, 3175, enclosing three postage stamps, or telephone (03) 795 2725. Distributor inquiries welcome.

OWNER BUILDER MATERIALS Fantastic opportunity. Collector's disposal. Doors plus. Large beautiful old timber — suit creative individual design. French doors also. Large oregon and baltic frames. Some fairlight windows, some glass surround. Cast iron hydronic radiators, fine quality, hand basins, f g shower, benches cupboards etc. Federation lightshades. Classic simple clean lines, embossed and art deco. Phone (03) 481 6869 or 685706.

SEEDS — 400 varieties - Herb, Flower, Oriental and Gourmet Vegetables, and Dried Flower seeds. Send $4.70 incl P & H for our colourful catalogue or SASE for a price list. Wall charts — $3.75 each plus P & H. KING HERB SEEDS, PO Box 14, Glenbrook 2773.

WOMEN WELCOME to experience Christian communal living on our rural property for one week or longer during September 5-30. Opportunity to explore prayer, communication, gardening, crafts, etc... food, accommodation free. Write to Sister Helen, Sisters of the Church, (Anglican), Dondingalong via Kempsey, 2440. Telephone (065) 669244.

BOTANICAL ILLUSTRATOR seeks position with herb farm or nursery illustrating catalogue or similar in return for free accommodation. Write PO Box 492, Paddington, Queensland 4064. Single male, non-smoker, vegetarian, age: 40.

TWO RAILWAY 'RED RATTLERS' CARRIAGES, unique opportunity as no more available. Excellent exciting style and atmosphere homes, 5-6 squares each or business venture. Phone (03) 481 6869 or 685706.

I AM thirty-six years old, slim, brunette, Jewish and a teacher. I have been travelling extensively and am now ready to settle into a community/communal life, and am looking for a Jewish university graduate over 30 to share my lifestyle with. Hannalene, 28 Edward St, Bondi, NSW 2026.

SEED PRODUCTION FOR THE AUSTRALIAN HOME VEGETABLE GARDEN, by Allen and Christina Barry. A book on collecting, processing and storing your own seeds, published by the Henry Doubleday Research Association of Australia. A group of organic gardeners & farmers. $4 posted, from HDRA, 4 North St, Mount Colah, NSW 2079.

BICENTENNIAL 200 SPINNING WHEEL 200 YEARS will be held on Saturday May 14th, 1988, Market Square, Grafton, NSW from 10 am to 4 pm. If you spin, you are invited to come along and enjoy this day. You are welcome to bring your own finished work to display or sell. We need your involvement to achieve our aim of 200 spinners, spinning together. We anticipate a most exciting day of 'yarn' spinning amidst the harmony of whirring spinning wheels. For further information — Grafton Fibre Craft Group, 16 Kemp St, Grafton 2460, or phone Linda (066) 42 5585 or Val (066) 47 3273.

KEITH & IRENE'S SYDNEY CITY Sydney past and present: what to see, where to shop, eat, stay and enjoy; 192 pages, maps, 100 photos. Price $12.95, post free to EG readers, from Smith's Guides, PO Box 378, Epping, NSW 2121.

LETS GROW GARDEN CLUB. A new correspondence club, with Glen Heyne, John Mason, Graeme & Sandra Ross and Mike Keelan. Benefits include . . . Subscription to Gardenscene (usually $27). Mail order catalogue. Exclusive plant and seed collections. Workshops, courses, tours and holidays. Special discounts - books, tools, products etc. Send $30 annual subscription to 'Lets Grow', The Garden Cottage, Malmsbury Rd, Daylesford, Victoria 3460.

PRESSED BLOCK, MUDBRICK-MAKING MACHINE for hire — Victoria. Machine can easily produce 75 bricks per hour, for very low hiring costs (see story in EG 53). If you want bricks in a hurry phone Brent or Kate (054) 27 1419, PO Box 325 Kyneton, Vic, 3444.

LAND LINES

LAND LINES are for people buying, selling, seeking or sharing houses and land. It is your responsibility to check all deals. We charge a rate of 24 cents per word (prepaid) for a listing of any desired length, plus $20 for a professionally-drawn illustration to go with your ad, taken from any old tatty photo you care to send us. All LAND LINES must include your name and address (phone number is optional). LAND LINES for the June issue should be in (to PO Box 188 Moreland, 3058) by 13 May.

HEALESVILLE Victoria. 'Moora Moora', situated on the top of Mt Toole-be-Wong, one and a half hour's drive from Melbourne, is a well established co-operative community of 6 clusters in 640 acres of bush and agricultural land. We seek a limited number of new families to join existing members whose interests are largely conservation, owner building, health, craft, music, agriculture and schooling. Write to 'Membership', Moora Moora, Box 214, Healesville, Victoria 3777.

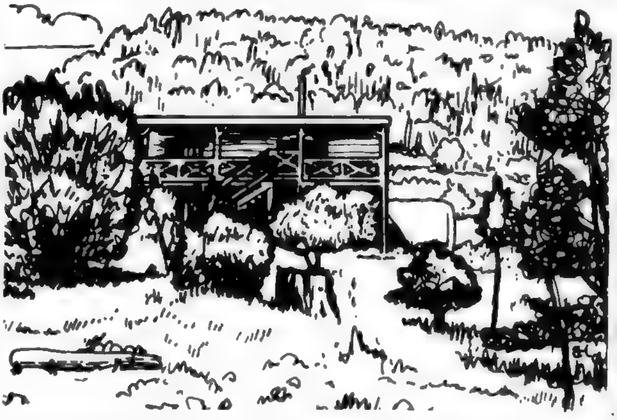
URBENVILLE, 30 km South of Queensland border. 55 acres of undulating lightly timbered land with approximately 25 acres cleared. Adjoins small piece of crown land with 100 ft waterfall on permanent running creek and is 3 km from Yabra State Forest (rainforest). Two dams, stock yards, hay shed and partially-built living shed with septic, electricity and telephone connected. Bitumen road frontage with school bus service, $50,000. Phone Don Jensen (044) 221 916 after 6 pm, or write to 36 Cavalier Parade, Bomaderry 2541.

MARYBOROUGH, QLD. One share in 1300 acre community located near Maryborough. Share consists of 10 acres, principle being bush with area cleared around house and gardens. Liveable dwelling and nearly completed mud brick house. Bearing fruit trees, irrigated from pump on dam to holding tanks. Solar electricity and tank water connected — $18,000. Contact Maree Howard, 43 Hillend Terrace, Hillend, Queensland 4101, or phone (07) 846 2281.

WANTED NEAR MELBOURNE Responsible couple (no children, no pets) seek basic accommodation in quiet country location within 2 hours of Melbourne, in return for caretaking duties or low rental. We have several years experience at small-scale organic farming — goats, cows, horses, poultry, gardening, water systems, fencing etc. Howard and Sue, RSD Goongerah, Victoria 3888. Phone (051) 540147.

TARADALE (CASTLEMAINE) — Central Victoria. Unique 3-4 bedroom mudbrick house featuring handcrafted staircase and large stone fireplace. 90% completed with wiring for solar and/or generator. Set on 37 acres of undulating bushland with some clearings. Adjoins State forest. Seasonal creek, 2 dams, 15,000 gal rainwater tank, garden shed. Very picturesque and private. 3 km to shops, 90 mins north of Melbourne. $95,000. Phone David Sharp or Jo Hughes, (054) 724131.

TOOWOOMBA QLD. 300 acres of timbered country. On eastern escarpment of The Great Divide. Very quiet and peaceful. Well and creek. Power. Phone passes. 15 km from Toowoomba, $65,000. Phone L & I Jacobsen (076) 307271.



LISMORE AREA. Compact comfortable timber home on 2 & 1/2 acres in established Multiple Occupancy with separate titles, soon Strata Title. 2BR, separate toilet (septic), gas, solar lighting and 240 volt power system. Small tool shed, lawns, gardens, many trees, beautiful views, wildlife, peace. From Lismore there is 35 kilometres of sealed road to property entrance. $50,000. Phone (066) 337177 or write to Frances Gilmour, C/ PO Rock Valley via Lismore 2480.

MID NORTH COAST — COMBOYNE. One fifth share of 640 acres of beautiful secluded wooded valley bordering on nature reserve. Includes 3 BR home, with slow combustion stove, hot/cold running water, phone, solar electricity, large shed, gravity fed irrigation, 2 dams, over 100 fruit trees, landscape gardens, permanent creek with good swimming holes. 10 minutes to school bus — 20 minutes to shops. Vendor finance available. $42,500, phone Sharyn (065) 504185.

GLEN INNES, NSW. Unique hand-built house on a secluded hilltop within a Multiple Occupancy community of 100 people. $12,000, Phone Allan (02) 327 1190.

NORTH EAST NSW. Interdenominational Christian hamlet. Old house on 5 acre share $35,000, cabin with share $15,000, 5 shares with council approval to build houses on up to 5 acres each $10,000. Committed Christians please, Dan & Debbie Bacon, Cawongla Road, Rock Valley 2480. Phone (066) 293367.

WANTED NORTHERN NSW. House to rent on up to 5 acres with 3 bedrooms, close to school, and with an option to purchase. 4/37 Wallis Parade, Bondi, Sydney 2026. Phone Vitale (02) 300 9035.

MOUNTAIN FOREST RETREAT 1/3 share of 400 acres steep eucalypt/rainforest. Small cabin on 1/4 acre clearing above permanent creek: hydro light, running h/c water, large kero fridge, flushing loo. Good access, $15,000. Lynne Davis C/PO Elands 2429.

MID NORTH COAST, NSW. Mudbrick/timber frame home on 10 acres adjoining State forest in quiet valley 15 mins from Macksville, 30 mins to beaches. The land is of hardwood forest with 2 acres of pasture and northerly aspect. 100 organically prepared holes for fruit trees. The home nestled in a timber setting is of pole frame, raft slab construction with two bedrooms, open living & kitchen area, study/loft and cellar storage room. Outside there is a mudbrick bathhouse/laundry. Other buildings are 9 X 6 metre shed, double carport and tackroom with holding yard. 10,000 gall rainwater tanks, phone connected. Power available 100 metres, 3 km to school bus. Price $82,000 neg. Phone (065) 696116 or 642219 anytime.

SOUTH EAST QLD. 20 km South East of Gympie, 60 acres of forest for sale. Two acres cleared for house and orchard area. 100 established various fruit trees — solar powered wooden house, bore, creek, adjacent to State forest and at the end of a dead end road. Price $70,000. Ms Cheryl Bean, 2 Scrivener St, O'Connor, ACT 2601, phone (062) 496381.

BETWEEN LISMORE AND MURWILLUMBAH The Lillifield community has 330 acres of beautiful land in the hills between Lismore and Murwillumbah. It's about 15 minutes from Nimbin and an hour from the coast and is fully approved by the local council.

Overall, the land is owned by an incorporated company but each member has shares which give entitlement to about 5 acres for private use. In addition, members share in over 100 acres of common land which is available to all for recreation, forestry, agriculture, etc, as well as having the use of the Community Meeting House, the tractor and other equipment.

The Daystar Rudolf Steiner School is located on adjoining land.

The basic framework of roads and dams has been completed and our initial membership has been established. Now we are looking for more people to help us move into the next stage of our developing community. People who will respect this beautiful land as well as each other.

The share price of $13,800 per household entitles you to all community facilities as well as to possession of your chosen 5 acre site.

If this appeals to you please write to: 'Lillifield', Lillian Rock, via Nimbin 2480, or telephone (066) 897 224.

NIMBIN, alternative powered home and 1/14 share in experienced, caring community on sealed road. 4BR's, 2 bathrooms, verandah all round, 2000 gal cement tank, 8 dams and crystal creek with 600 ft hd, rising in adjoining national park, provide ample water. School bus at gate. Photos available, $60,000. Phone (062) 88 0109 or write to T Ellis, 1 Darwinia Terrace, Rivett, ACT 2611.

JENOLAN CAVES AREA NSW - Farm and garden helper/occasional caretaker for small organic farm in return for s/c accommodation plus extras. Please write to Elizabeth Shearman, Box 118, Oberon, NSW 2787.

BETWEEN EDEN AND BOMBALA NSW. Bush blocks for sale in the forest between Eden and Bombala. Wilderness area with plenty of water. 40 acres from $22,500, 2 bigger ones left, POA, ring Nancy on (047) 84 1020, or write to 'Bush Blocks', PO Box C63, Clarence Street, Sydney 2000.

POMONA—KIN KIN. 10 acre bush block, large log cabin, 3 dams, 360° views, $28,000. A Samut, C/ PO Pomona, Queensland 4568.

WANTED ANY AREA Young couple seeking to caretake house and land on which to grow natural food. Land and soil improved and loved. Any area or arrangement considered. Please contact Peter Crutchfield, 7 Aspinall St, Golden Square, Victoria 3555. Phone (054) 414076.

NORTHERN NSW KYOGLE AREA. 105 acres of rainforest, house on elevated home site with views to coast ranges. Permanent creek, gravity fed dam, school bus, pot belly, septic, phone, garage. Use of 4WD tractor (approximately 3 acres cleared) would suit two shares. $72,000, phone H McMillan (07) 355 1600.

BROOWEENA, QUEENSLAND. 1/20th share in Environment Reserve 1300 acre property, 10 acre entitlement. Queenslander farmhouse. Large shade trees. Good soil. Suit sub-tropical fruits, access to sizeable dam. Situated 70 km west of Maryborough, $20,000. Other shares also available. Please contact Peter Gregory, Utopia Rd, Brooweena, Qld, 4620.

TULLY, NORTH QUEENSLAND. Half share in a secluded property of 55 acres 17 kilometres from Tully. 300 bearing organically grown fruit trees, many of them rare fruits, three creeks, dam, rainforest. Preferably a family but not essential. $30,000. Write to S Haffenden, Box 24, Tully 4854.

TASMANIA — LORINNA — 25 acres in beautiful bush mountain valley setting with handcrafted timber home. 3 Bedroom, cosy wood heating, cooking, needs finishing. School bus to Sheffield. $38,500. Also 25 acres with barn $18,500. Phone (066) 558538.

KYOGLE NSW. Cooperative living opportunity $7500 for 10 acre share in 1000 acre valley, Black Horse Creek, Kyogle. Established for 5 years. Phone Dianne MacLean, (07) 371 7030.

WANTED house for low rent, or caretake on North Coast of NSW. For a quiet couple with two children. Love gardening and animals, maybe option to buy, Doris and Tom, 63 Bombala St, Delegate 2633.

MT PERRY, WEST OF BUNDABERG, picturesque unpolluted fertile soil, permanent creek. 90 acres ($30,000) and 147 acres ($25,000). Phone Greg Knight (071) 774139.

TOMEWIN VIA MURWILLUMBAH. 1/15th share (1.5 ha) council approved multiple occupancy, rainforest, dam, views, 1/2 hour to Gold Coast, 1 1/2 hours to Brisbane $22,000. Message to Charmaine on (066) 888325.

BETWEEN NIMBIN AND KYOGLE, Community settlement on beautiful 200 acre property. Affordable to very low income people due to NSW Department of Housing loans available. Advisers, skills course and try out period included. This unique pilot project is now underway. For more information, and to apply, write to Nimbin Neighbourhood Centre, attention D Leggett, Cullin Street, Nimbin, NSW, 2480.

continued from page 51

ances permitted, using the strontium ferrite ceramic magnets described in this book, can be much larger than in a conventional machine.

Technically speaking, the book shows all the design and construction steps for building a low speed, low voltage, permanent magnet, three-phase alternator with built-in wave rectifier, making it in effect a DC generator. It can be used from 12V to 36V with a top-rated output of 1000 watts — 28 amps and 36 volts at 740 rpm.

As the publishers have poimted out, people who have an average home workshop and build the dynamo would be able to turn out more, and supply other Earth Gardeners. This would be particularly relevant for the larger sized generator described in one of the book's appendices: twice the size of the original generator, 8.46 kW of power at below 700 rpm, with an electrical efficiency of 94.8 percent!

Just think how satisfied you'd be to have this book on your workshop shelf after constructing such a generator.

Please allow 2 to 3 weeks for delivery.

BOOKS & ISSUES

BOOKS **EARTH GARDEN, PO Box 188, Moreland, Victoria, 3058**

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EG1: Move out . . . food co-ops . . . Kibbutz and Moshav . . . Montsalvat . . . herbs . . . Fred Robinson . . . bean sprouts . . . compost and mulch . . . comfrey . . . earthworms.

EG2: Start a garden . . . Neil Douglas . . . Keyline system . . . Kiewa farms . . . drying and storing food . . . hydroponics . . . recycling garbage . . . nutrition.

EG3: Herbs . . . compost . . . fast fertiliser . . . all about goats . . . mudbricks . . . domes . . . water wheel . . . bread . . . salads . . . pottery . . . spinning . . . vegies.

EG4: The honey bee . . . back to the land in Tassie . . . the transition . . . black sheep . . . tanning . . . candles . . . bread . . . donkeys . . . a wall-hanging.

EG5: The wind — windmills . . . windpumps . . . generators . . . raku pottery . . . Cinva ram . . . poultry . . . Hamburghs . . . moon planting . . . fallout shelter . . . vegan way.

EG6: Solar 1 — sun cults . . . solar cooker . . . sundials . . . Lost World . . . Clifton Pugh . . . concrete house . . . Shalom . . . Cajun cookin' . . . horses . . . spirit of Nimbin.

EG7: Solar 2 — hot water . . . Mudbrick techniques . . . Angora goats . . . make a leather bag and belt . . . mushrooms . . . natural dyes.

EG8: Gas power — methane digester . . . by truck to Tassie . . . cumbungi hats . . . inkle loom . . . candles and tapers . . . country cottages . . . A-frame . . . school gardens . . . sourdough.

EG9: LP gas . . . Mary's place . . . building with stone rubble (slipform) . . . macrobiotics . . . oats . . . ducks . . . rug frame . . . how to kill a pig.

EG10: Granite house . . . geese . . . chip heater . . . bamboo flutes . . . build beehives . . . Jarrah shingles . . . mudbricks . . . Bio-dynamics . . . seaweed . . . tandem . . . Index (EG1-10).

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